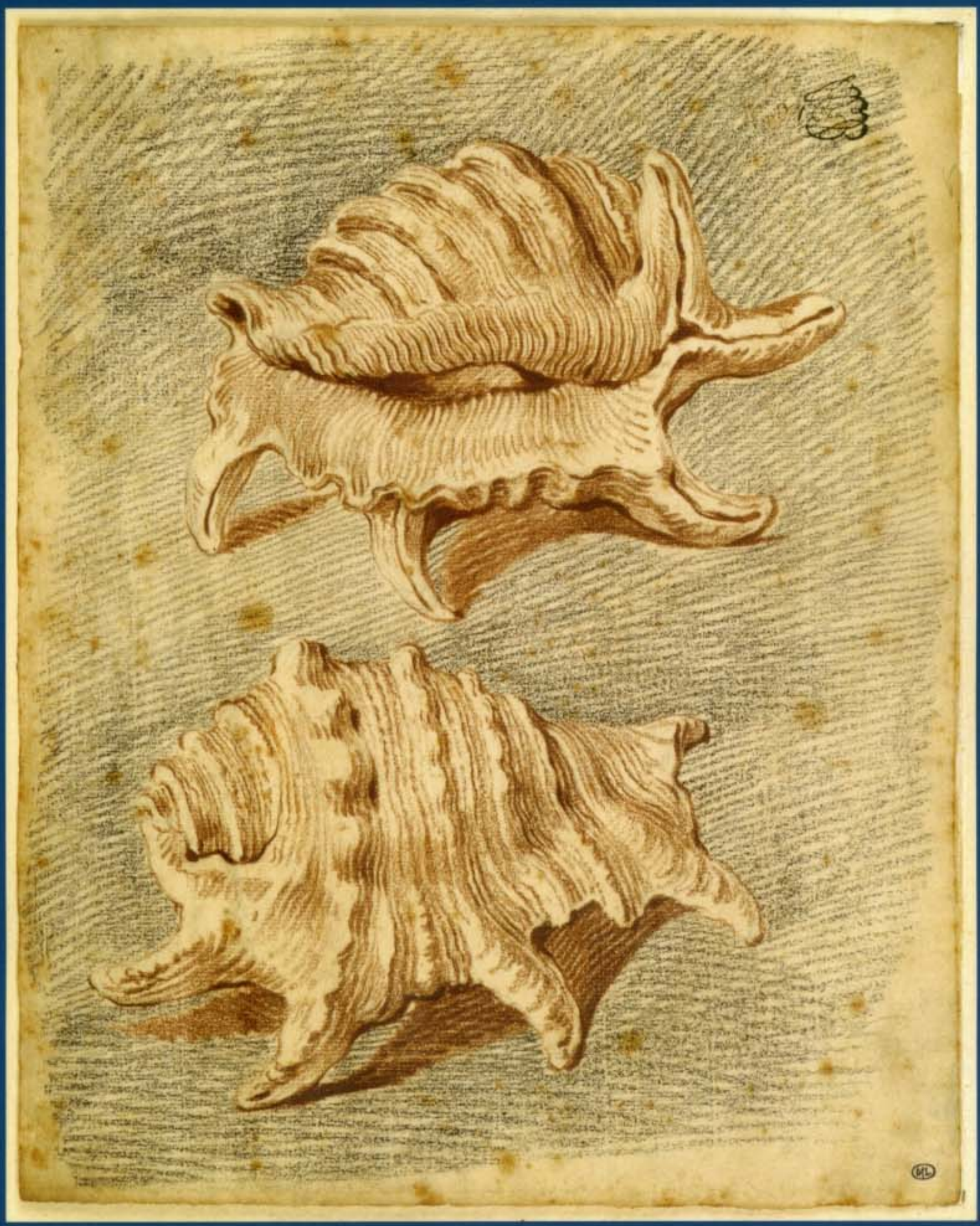
Drawing to See



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Drawing to See

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For Barbara, Mark, and Renee

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Preface

Among the earliest traces of our common ancestry are cave drawings and paintings of plants, birds, hands, people, animals, and even hunting scenes. Although we can't really know what motivated these remarkable images (magic? score-keeping? amusement?), it seems that making visual images has been necessary to humankind, almost from the start, for many kinds of clarifying, recording, and expressive reasons.

As you embark on the study of drawing, it is important to recognize that, to this day, drawing is still a direct (and enchanting) way to clarify, to record, and to express. Indeed, drawing well is mostly about doing these three things in a resolute and appealing way. No matter what your ultimate goal for drawing may be, you will always be trying to communicate your ideas and experiences clearly.

There are many reasons and ways to draw. A drawing may be motivated by a wish to study a form's appearance, or to plan a creative work in another medium. A drawing may serve to show a client what you intend to create, or to explore the images of your imagination in order to see what they may look like and where they may take you. Many drawings are motivated by a wish to experience the visual and expressive character of something that is seen or recalled—the places, things, and people in the world around you.

But whatever stimulates you to draw, the "ticket of admission" into the great realm of drawing is the ability to see a subject's parts *in a relational way*, that is, to see the similarities and differences among a subject's many features and conditions. For example, if your subject is your own hand, opened before you, palm side up, with your extended fingers spread, the middle finger is longest, but by how much when compared to the ring finger? to the little finger? And is the little finger shorter or longer than the thumb? Looking at the spaces separating the fingers, which space is the widest and which, the narrowest? And, although the four fingers are similar in their shape, what differences do you see in their contours? Where are the lightest tones on your hand, and where are the darkest ones? Among the hand's many folds and creases, which are the most pronounced?

These are only some of the questions you need to answer in order to draw the unique nature of your hand in an objectively truthful way. Learning how to draw begins with, and is nourished by, learning how to see, and learning how to see begins with recognizing that inquiries about relationships of size, shape, value, position, and more, must lead the way. It is the inability to see such relationships that stands squarely in the way of learning to draw. Although your eventual creative expressions may take you far from drawing in an objective mode, reaching these goals cannot benefit from a functional blindness to the relational matters fundamental to drawing.

The authors of this book, having taught drawing for many years, have repeatedly seen the often rapid development in drawing skills among those student-artists who approach the learning of drawing in an inquiring, and not in an arbitrary or declarative, way. Such students soon realize that sensitively relating a subject's parts and its underlying patterns, when comparing, measuring, and choosing, is a vital key to creating drawings, in any mode, that ring true and come alive.

With that in mind, the authors felt that starting this study of drawing with an introduction to a wide range of relational matters (Chapter One) will alert you to more of them than you would otherwise be likely to see and consider. The advantage of beginning in this way is important because seeing more of what is there to compare and relate means you have more control of what you draw at every stage of your studies—the more we see the better we draw. For example, reading Chapter One's discussion on seeing directions—the tilts and turnings of a subject's parts—in alerting you to where and how these directions show themselves—will help you to better draw the main topic of Chapter Two: a subject's *gesture*.

The authors further felt that, just as a drawing is invariably created by a process which moves from the general to the specific, the teaching of drawing can also begin (more or less) with a concentration on the most encompassing matters of drawing before turning to more particular ones. That is why, once you have been alerted to what measurable matters to look for in a subject, we have presented the concept of gesture as the most pervasive feature of anything you set out to draw. This is so because everything has gesture, has some enveloping pattern of action and energy that underlies its form, be it the human figure, an eyelid, a staircase, or a sparrow.

And, just as Chapter Two ends with an approach to the visual element of *line*, (for the underlying matter of gesture soon rises to the surface where lines are a direct and efficient means of proceeding further), Chapter Three begins with line, exploring its several guises and functions, and ends by approaching the next logical matter: *shape*. Proceeding on our journey from the general to the specific, Chapter Four examines the several roles of the element of shape in drawing, especially shape's role in forming a volume's surface facets, or planes. And planes, when they get together, produce a form's *surface structure*, a major focus of Chapter Five, which then goes on to explore two more visual elements: *value* and *volume*.

Chapter Six examines some issues in drawings that use the element of *color*, perhaps the most mysterious of the visual elements, and the most powerful too, as it modifies all the other elements. Chapter Seven and Chapter Eight depart from our general approach and move toward to specific approaches, as each chapter concentrates on ever-present matters fundamental to drawing. Chapter Seven takes on the illusive but crucial matter of *composition*, and shows that the successful communication of your creative meanings owes much to the underlying dynamic forces alive in the things you draw. Up to this point the book has concentrated on how to better draw the things you actually see. Chapter Eight considers how to respond to subjects that you don't actually see: those of *recall* and *imagination*. All of the preceding chapters will have prepared you for encountering and capturing these more personal and often fleeting visions. Chapter Nine concerns the materials and tools of drawing, an important subject because of their influence on the images you will make. Lastly, we have included a glossary of terms as used in this book, to help you get the most out of each discussion.

Put simply, learning to draw means doing a lot of it as you take on the many challenges of relational seeing. One of the most useful tools for enabling you to draw anywhere and at any time is the sketchbook, an invaluable learning device that students and artists have used for several hundred years. There are many kinds and sizes of sketchbook. The authors suggest selecting one that can be easily carried around. A sketchbook that measures approximately $8\frac{1}{2}$ by 11 inches is just about right.

In the relative privacy of a sketchbook you are more likely to "take chances," to more bravely risk losing a drawing that tries to reach for an idea, a procedure, or a subject that, earlier on, was too difficult to manage. Think of your sketchbook as a private journal or sanctuary, not available for others to browse without your permission. It also helps to think of it as a kind of gym, a place where you go to visually "work out." And, as in a gym environment, where a failed attempt is simply dismissed and tried again (and again), a sketchbook drawing that doesn't succeed should likewise be dismissed and tried again, and not be seen as an unmovable limit of your ability to draw.

To continue the analogy, as with your physical limits in the gym, where you can jump only so far or lift only so much, learning *how* to jump farther or *how* to lift more will, in time, get results. It is the same with drawing. Learning *how* to see more will, in time, result in drawings that succeed in saying better what you mean them to say. The sketchbook helps to speed up the process of seeing, because many sketchbook drawings are likely to be of short duration—a condition that encourages artists to see in a more selective and relational way—the better to recall the subject, which may have moved on. This practice makes for better observation and more resolute results.

The advantages of the sketchbook for practice, investigation, planning, and the recording of subjects you would otherwise not encounter are too important to bypass. Browsing this book's reproductions of old and contemporary master drawings will show how many of these works are, if not actually sketchbook drawings, in the investigative spirit of sketchbook drawings.

A word about the drawings that appear in the book is in order here. The authors felt that showing you the most outstanding examples of matters referred to in the text far outweighed all other considerations. The idea of insisting on a policy that would all but exclude either contemporary artists or old masters in making our selections seemed unnecessarily restricting as extraordinary drawings are to be had from each era. Instead, we searched for works that most clearly demonstrated the various points in each chapter with little regard for when or where a work was created.

Another matter to think about as you embark on the study of drawing is the evaluation of your efforts by others. Art students, like professional artists, will have their works judged now and then. The famous art school "critique" of student work is one example of this, the opinions of friends and family, are another. Although such evaluations can be valuable to the development of your drawing skills, it is usually difficult to hear that your judgments or manner of drawing are regarded as faulty in some way. It may be of some help to recognize that there are, broadly speaking, two categories of criticism: those having to do with provable fact, and those with opinion. Teachers of basic drawing will generally emphasize the former: "the legs are too short for the rest of the body," or "the perspective of the table is off," or "the volume of this form isn't clear to me." Such criticisms, being plainly factual, can be readily accepted. Criticisms having to do with opinion may also be valuable, but these often have as their basis certain artistic beliefs or other values of importance to the critic that he or she hopes you will consider. When, in the opinion of an art teacher, your drawing is regarded as "too tight," "too carelessly observed," "too concerned with surface effects," or "unbalanced on the page," you are probably getting good advice. But when a relative or a friend suggests your drawings should be "prettier," "less messy," or "not so sad," you can safely disregard the criticism, however well meant it may be. Criticism is best sorted out by having in mind the goals you hold for yourself.

As you read (and draw!) your way through this book (ideally while enrolled in a drawing course), remember that you are probably a good judge of your progress in developing your drawing skills, in the light of where you wish to go. But so too, are the artist-teachers who are helping you by alerting you to possibilities, problems, and challenges you need to confront to reach your goals. They can help you work through obstacles and achieve results. The authors hope this book will also help you in that important way.

ACKNOWLEDGMENTS

As part of their lives as artists and educators, the authors have participated in or conducted drawing workshops and seminars around the country, from Rhode Island to Hawaii. In comparing experiences, we found the primary interest of virtually all beginning art students is to acquire the empowering (and some would say, magical) ability to create drawings that objectively reflect what they see. For, no matter what their varying artistic goals, they intuitively know what their art teachers will confirm: that bypassing the basic visual skill of seeing and drawing will significantly limit their creative understanding and ability.

We have each even had the experience of encountering advanced students who are uneasy about their grasp of fundamental drawing skills and eager to discuss and reexamine perceptual matters of the most elementary kind. This logical necessity of first learning how to see, reflected in the views of our many colleagues near and far, led us to consider a concise and straightforward text designed for the student embarking on an exploration of the magnificent realm of drawing.

This book is our attempt to organize and clarify those basic perceptual and organizational matters necessary to create drawings that interpret an observed subject in an objective and sensitive way. Although the book concentrates on the options and challenges of drawing a subject that is physically present, it shows how those matters can be applied to subjects of our imaginative and more subjective "inner eye."

We wish to express our deep appreciation to the many students, artists, and friends who have helped in various ways to bring this book into being. We wish also to thank the many museums, galleries, and collectors for granting permission to reproduce drawings in their collections.

We wish especially to thank Bud Therien of Prentice Hall for his initiative and considerable assistance and Jean Lapidus, our outstanding production editor, for their finely honed skills and deep involvement in helping to give this book its present form. The authors also thank the following reviewers for their helpful suggestions: Andrew Murad of McLennan Community College, TX; Angela C. Curreri of Barry University, FL; Drake Gomez of Keystone College, PA; Ken Burchett of University of Central Arkansas, Arkansas; Adrienne La Vallee of Saint Anselm College, NH; Ruth Trotter of University of La Verne, CA; Kevin Sparks of Asbury College, KY; Stephen LeWinter of University of Tennessee at Chattanooga, TN; and Ann M. Beiersdorfer of Xavier University, OH.

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1

Matters of Measurement

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The central theme of this book is focused on expanding your ability to see and relate qualities and conditions in an observed subject so that you can draw it in an objectively truthful and sensitive way. Although it is likely that the subjects you draw will be physically present, enabling you to check what you are drawing against what is positioned before you, the information in this book should also help you to better draw something you have recently seen or even imagined. The rationale for this approach is the same as for dealing with ourselves and with the life around us: it is necessary to see things as they really are before trying to make them better. For artists, "better" has to do with more personal satisfaction in a drawing's power to capture and express what was intended. It seemed logical to the authors that starting with a chapter that shows you the many ways to capture and convert the forms you see around you onto the flat page, in an objective way, will enable you to better apply the book's information and guidance as you progress in your studies. It will also bring you sooner to the point where your more personal ideas and needs will find expression in ways that others can understand and enjoy.

Developing the skills for objectively drawing what we see begins with the recognition that seeing relationships of size, shape, placement, and tone among the parts of the subject in front of us plays the crucial role. Other important

relationships that are more or less "under the surface" of the subject have to do with how the parts are arranged and constructed. Learning how to find such connections and to "see" a subject's subterranean aspects is similar to learning about grammar and syntax. Just as finding the right words and getting them in the right order produces sentences we can understand, so does finding the right lines and tones in the right order produce drawings we can understand. Although acquiring such drawing skills is far more exciting than tedious, it does require both practice and patience and is, in any case, a necessary prerequisite to any form of visual expression. Learning about gesture, perspective, and structure; seeing how line, shape, and value create volume and space; and discovering how the tensions and energies that animate our drawings come about are some of the important "under the surface" factors we will examine in depth. But running through them all is the matter of comparison, of measurement—of allotting to each part of a drawing its needed direction, scale, shape, and value. Good representational drawing always depends on such measurements, and such measurements depend on relational seeing, that is, on comparing one part to another to see the similarities or differences between them.

A FORM'S DIRECTION

Seeing the actual tilt or angle of a form is, of course, necessary to drawing it on the page. Consider the hammering together of a crate. To construct a crate each board needs to be measured and cut to the right *size* and *shape*, and placed in the right *location* and *direction* before nailing it to the rest. That is not unlike the kinds of measurement that go into the making of an objectively conceived drawing. In such drawings, the "boards" are the marks we make to represent the things we see.

> ***All drawings consist of a variety of marks made on a blank surface. They may be lines, smudges, or stains ... together they form groupings that can objectively simulate a subject's parts.***

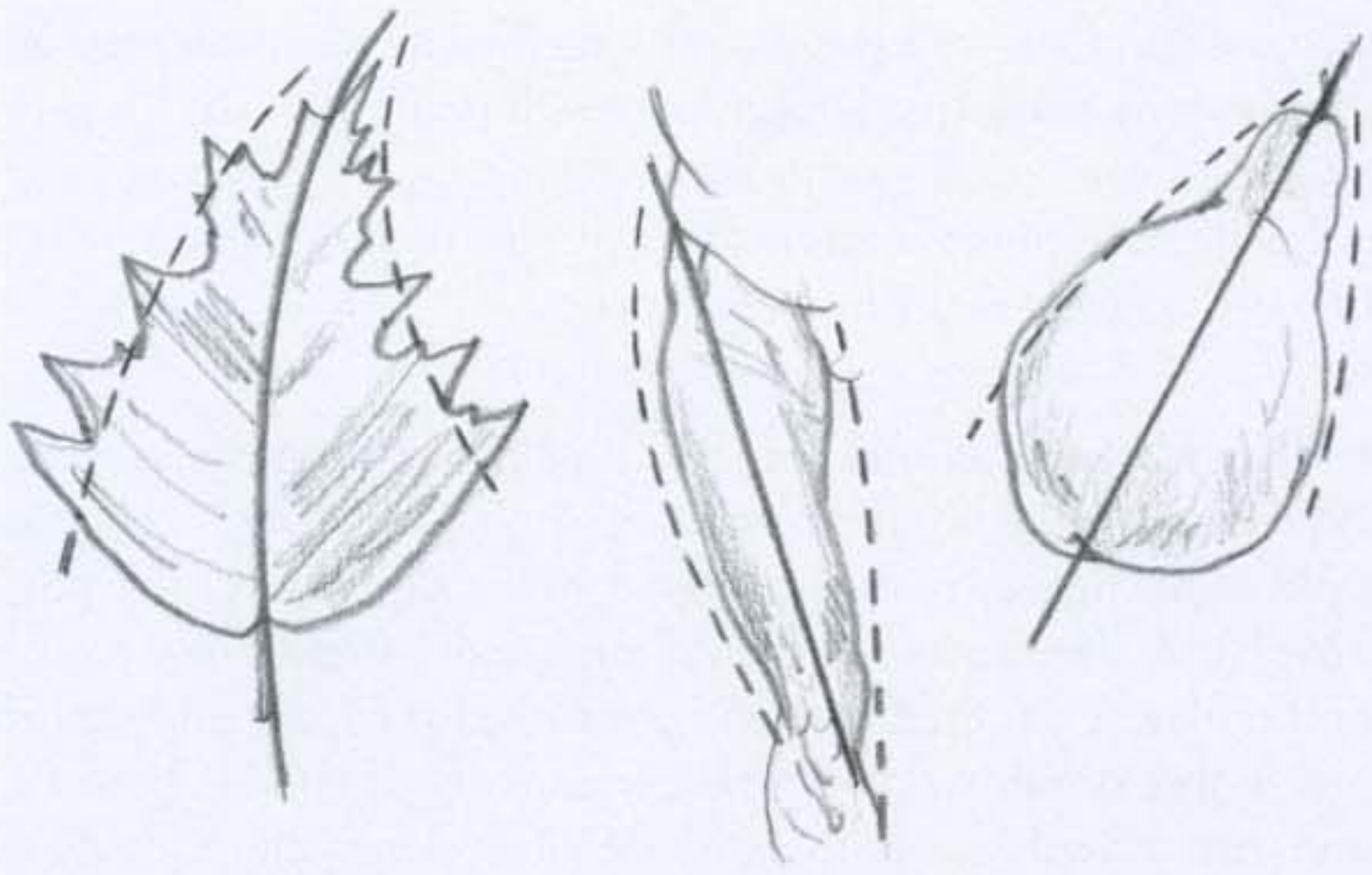
All drawings consist of a variety of marks made on a blank surface. They may be lines, dots, smudges, or stains, or some combination of such marks. Together they form groupings that can objectively simulate a subject's parts. To succeed in doing so these groupings of marks, representing the various forms of the people, places, and things we draw, in addition to being the right size and shape, need to be positioned in the *right place* and in the *right direction* on the page.

Vertical and Horizontal Rightness

To establish a form's rightness of direction, or tilt, you must be mindful of the vertical and horizontal boundaries of the page you are drawing on. Holding in mind the two "given" directions of the page helps you to better judge whether a specific part in your drawing is tilted in the same direction as the same part in the subject, thereby helping you to avoid drawing a house or a horse at some impossible angle. If, for example, you see a tree trunk that is almost, but not quite, vertical, the degree of its departure from a true vertical is easier to judge when you compare the trunk's tilt to the vertical direction of the edge of your page. Another aid in determining a true vertical or horizontal direction is "hard wired" in our brain, and has to do with gravitational force and our sense of balance. It's what makes it possible to hang a picture on a wall and know with certainty when its position is no longer at an angle, however subtle, but is "straight." Calling on this built-in sense as you draw also helps you to judge a part's angle by comparing it to your intuitive feel for vertical and horizontal rightness.

Seeing the angle of a form you wish to draw requires you to see the centerline or *long axis* of that form *before* regarding its contours because a form's contours seldom match the direction of a form's long axis (Figure 1.1). Bypassing a search for a part's actual tilt to get at its contours first often shows the contours to be drawn at wrong angles.

Figure 1.1



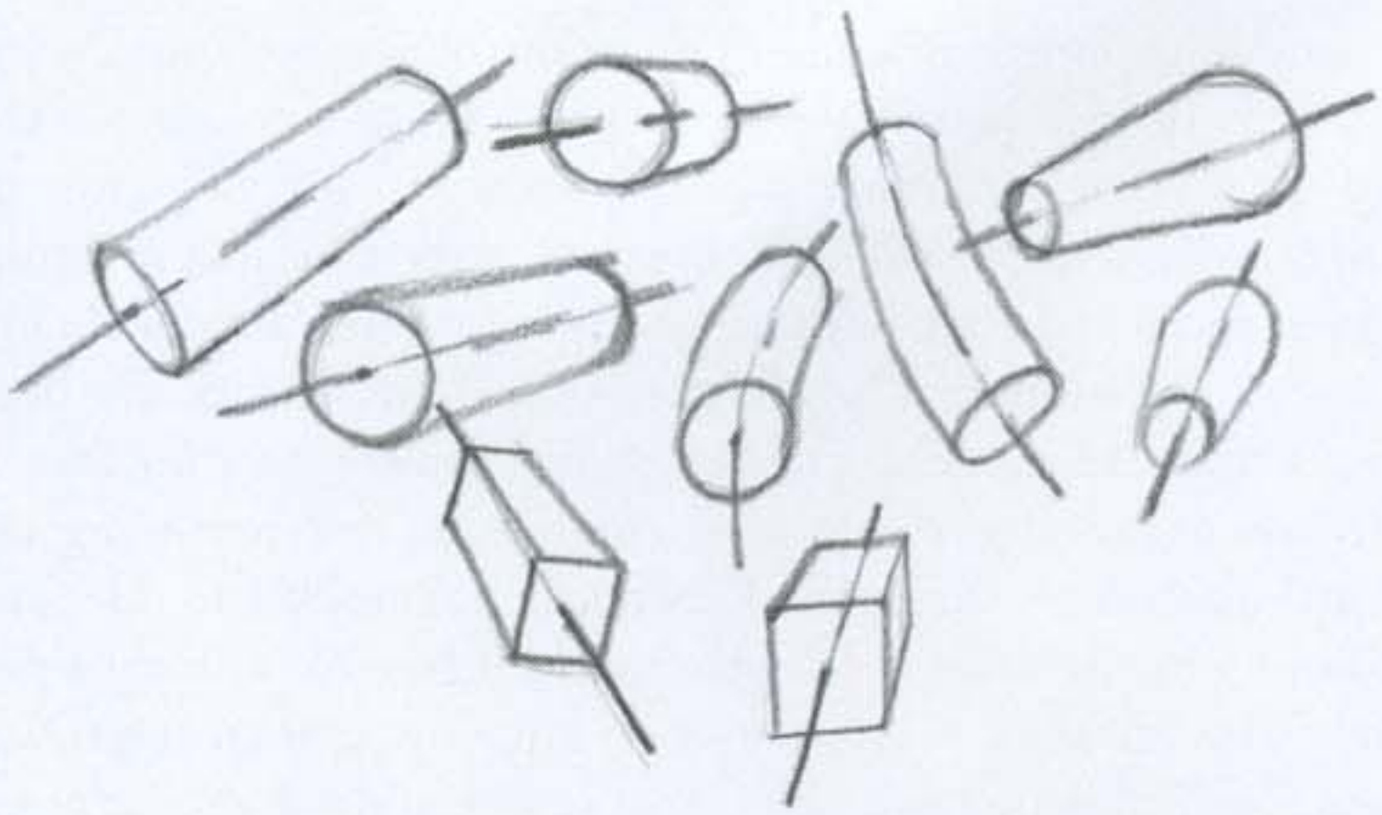


Figure 1.2

The main difficulty in drawing a subject's parts at the angles they actually offer to your view is that many of the parts you see do not face you frontally, but are turned away from your view to some degree. They are not parallel to your eyes, but are seen at an oblique angle, moving back into a spatial field of depth. Such more or less "end on" or *foreshortened* views are confusing at first because we cannot easily disentangle a form's two-dimensional state from its three-dimensional one. But remember that the marks you make on the two-dimensional page, as well as the forms they represent, must first be seen as two-dimensional—as tilted to some degree *on the page* (Figure 1.2). Drawing forms to suggest they go back into a spatial field of depth will be of much interest to us later in this text, but here it is a form's orientation on the page that must be seen.

The Clock's Long Hand. In Figure 1.3, the variously angled, often foreshortened forms convey an appearance of "rightness." We accept the many tilts and lengths of the figure's parts as necessary to the depiction of this pose. But Abeles had to first locate these forms on the flat surface of the page. For example, he had to see that the figure's left upper leg was positioned vertically and that the lower portion of the woman's hair was oriented horizontally. If you imagine a clock face to surround each of a subject's forms, with the clock's long hand running through the form's longest dimension you can locate the tilt of parts with some precision. For example, in Figure 1.3, the figure's right upper leg is turned to two (and eight) o'clock, her lower right arm to five (and eleven) o'clock, and so on, as in Figure 1.4. Artists

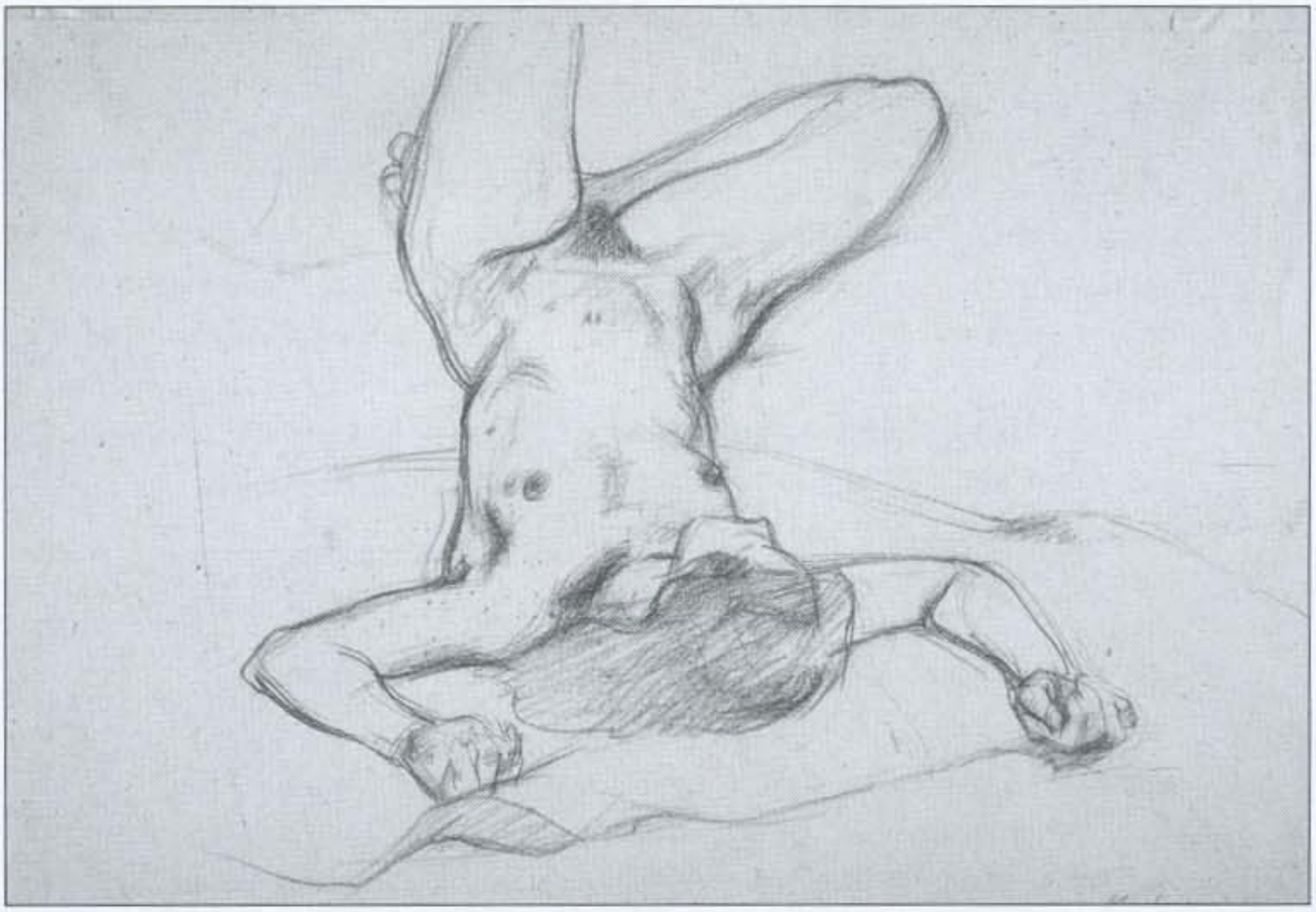


Figure 1.3 Sigmund Abeles (1934–), *Bridging from Bed to Floor*. Charcoal pencil, 16 × 20 inches. Courtesy of the artist.

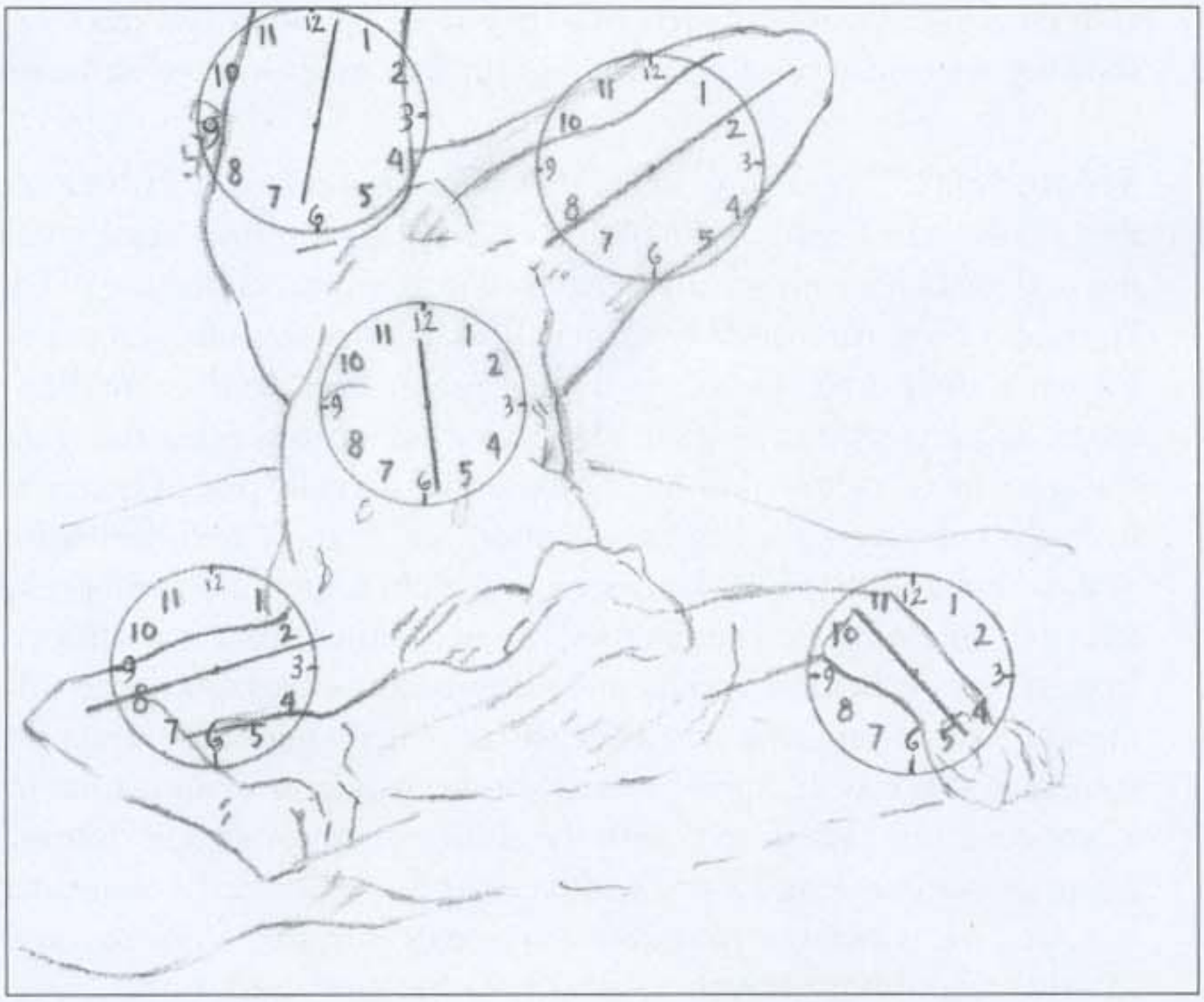


Figure 1.4

often use this convenient tactic to better see the two-dimensional directions needed on the page that are used to depict a three-dimensional form in space.

To aid in seeing the angle a part must take on the page, many artists close one eye when looking at that part, a tactic which somewhat reduces the sense of depth perception. With the form's "in and out" aspects now reduced, it is easier to see its two-dimensional direction. Try it and see.

Learning to see that solid masses have a flat shape configuration that can be transferred to the page is one of the most important concepts in learning to objectively draw what you see ...

Seeing Alignments. An important offshoot of seeing a part's long axis is seeing what other parts or edges of parts are in alignment with it. For example, in a still life setup, the base of a bottle on the left side may be aligned with the top edge of an apple on the right side. Or, as in Figure 1.5A, shapes of differing kinds, drawn at different angles are aligned in forming a horizontally oriented S-shaped pattern. Not only are such alignments necessary in objectively establishing certain observable facts about your subject, but they serve to "weave" a drawing together, by showing relationships of position and tilt that might otherwise be missed.

Seeing "Flat." Learning to see that solid masses have a flat shape configuration that can be transferred to the page is one of the most important concepts in learning to draw objectively what you see, and is an important feature of Chapters Three, Four, and Five. Almost all beginners find it easier to make a more accurate drawing when their subject is seen in a photograph, because they are then recording the edges, alignments, and tones of one flat surface onto another flat surface. But when the same subject shown in the photograph is actually placed before them and seen from the same view, the beginner cannot "see" that the two-dimensional properties of direction and shape, so easily seen in the photograph, are still present in the subject now before them. To better see the two-dimensional actualities of a subject in front of you, it helps if you imagine it to be a photograph of the subject—as having only shapes and tones on a flat surface. Again, closing one eye helps to see the subject in this way. It converts what you see to a flatter, monocular image, and not a binocular one. Then, too, with the subject seen somewhat "flatter, it is easier to judge the various lengths and widths of its parts. Similarly, squinting at your subject, because it reduces your ability to see details, helps you to see and evaluate a subject's important generalities of shape, direction, and tones.

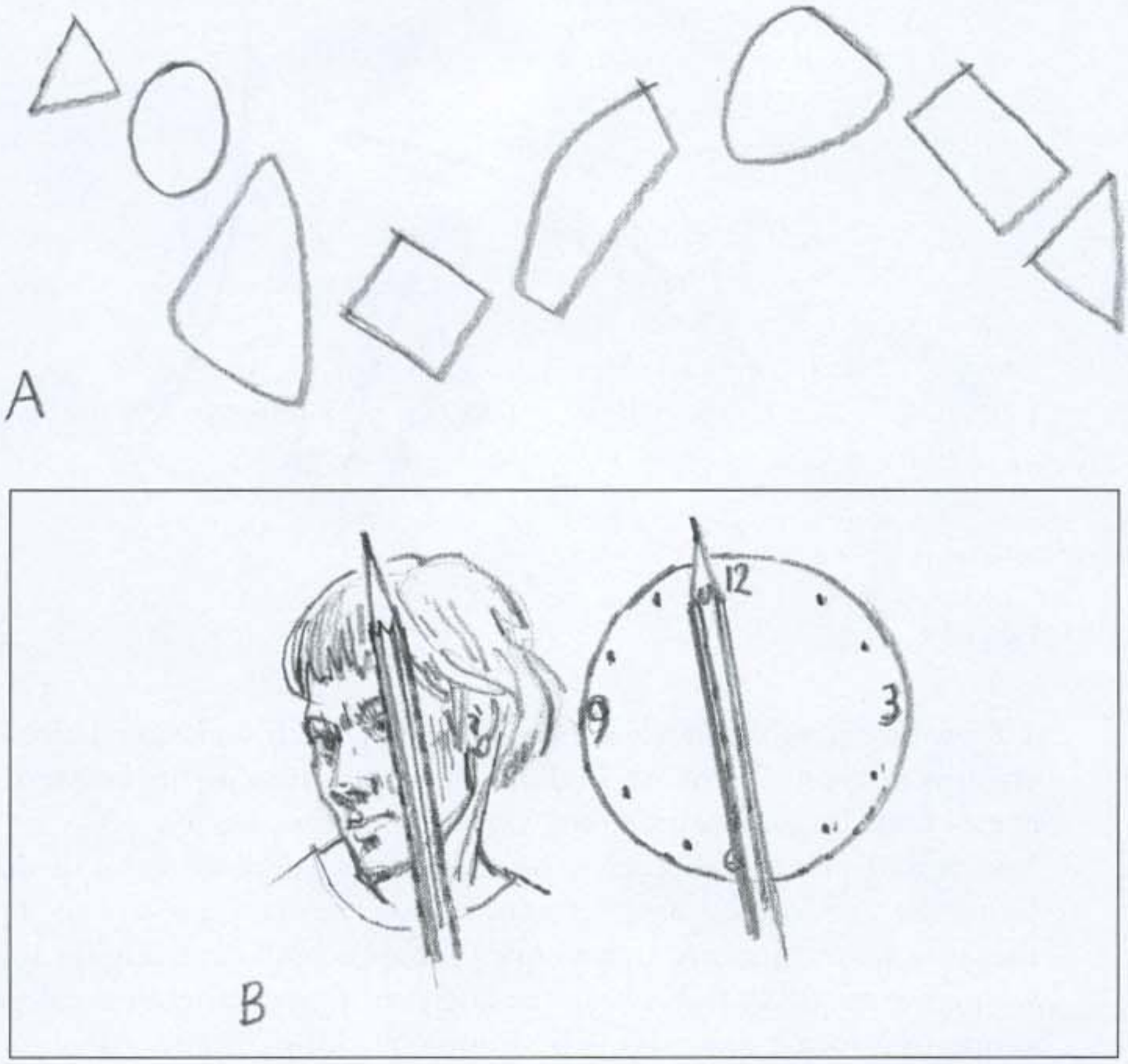


Figure 1.5

Judging Tilts. Another useful way to judge the various directions of a subject's parts is to hold a pencil (or any straight-edged object) at arm's length and turn it in the direction of a part's long axis, or centerline. Similar to the device of imagining the long hand on a clock face as a guide, your pencil, aligned with the part's long axis, now shows the angle needed in your drawing of the part, as in Figure 1.5B. This way of judging a long axis is also useful in seeing the alignment of parts.

Still another important way of measuring the direction of an observed form is to see it in relation to the direction of other forms in the subject. If, for example, we set out to draw a wagon wheel, we know that each spoke emerges from the wheel's hub and aims for the rim in a direction slightly different from that of its neighbors. But will the spokes in our drawing be equally spaced apart at the rim?

Figure 1.6

They will be if we accurately see the direction of each spoke in relation to the others. It is necessary, therefore, in developing your drawing to constantly judge the angle of one form in relation to the angle of another.

A long axis is often seen to be straight, but, depending on the form, it can be curved. A banana, a bent torso, or a flower stem are a few of the many forms that may better conform to a simple C-shaped centerline (Figure 1.6). As with seeing the relationship between the angles of forms, judging the degree of curvature of a form's long axis is best done by comparing its curve to any other curve in your subject.

In drawing, the spaces between forms are as important to see objectively as are the forms themselves (see Figures 3.7 and 3.8). If the centerlines and shapes of such interspaces are wrong, the encircling or adjacent forms will also be wrong in some way. Seeing the direction (as well as the shape and scale) of such *negative* spaces in your subject is basic to observational drawing, as we will see in Chapter Three.

DIRECTION AND CONTOUR

Just as a solid form (or part of a form) has a single straight or curved axial direction, so do its contours show segments of edge turned in various directions. Once we have drawn the tilt of a form we can turn our attention to seeing the differing directions of these large and small contour segments.

> ***... no two artists will interpret the same contours in the same way.***

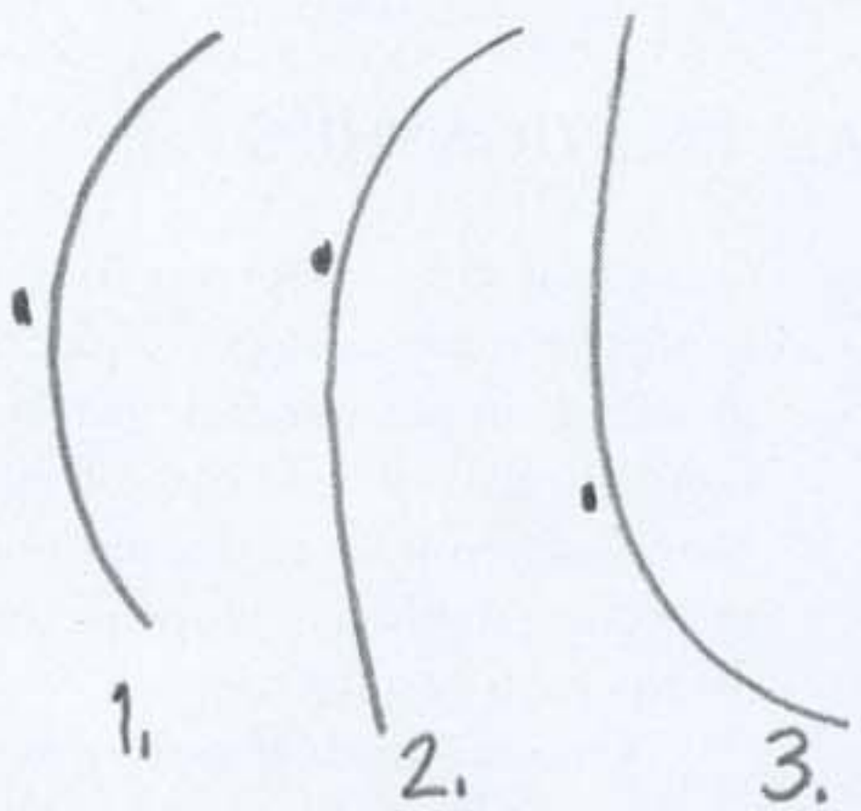
Straights and Curves

Measuring the length as well as the angle of each segment of a form's edges is necessary when drawing contour turnings. For example, as Figure 1.7 shows, line B was drawn by seeing that its subject, line A, could be analyzed as consisting of seven segments, each with its own angle and length. To help you clarify what you see as you follow the contour's turnings, it is useful to interpret each turn as being either a straight line or a simple C-shaped curved line, with its apex at one of the three places shown in Figure 1.8. This slight simplification of each segment defines contours in a more incisive way, and makes it easier to draw even complicated contours. This straight or curved manner of analysis results in contours that are both accurate and resolute; we feel that such contours have an authoritative character. Rubens, Rembrandt, Degas, and Picasso are some of the many artists whose drawings show something of this clarifying tactic (Figure 1.9). It is important to point out that no two artists will interpret the same contours in the same way. Some artists will favor straight lines, some curved lines, and some will show a more balanced use of these two options. This is so because each artist has his or her own way of looking at form. It is a procedure that allows for more personal notions of how to see and draw contours. What these variations of response have in common is purposeful judgments about the ever-changing directions of a contour.

As with the difficulty of seeing the direction and length of a foreshortened form's long axis, so, too, is it challenging to see the actual tilt and length of a

Figure 1.7

Figure 1.8 Apex of line 1 is in curve's center. Apex of line 2 is near top of curve. Apex of line 3 is near bottom of curve.



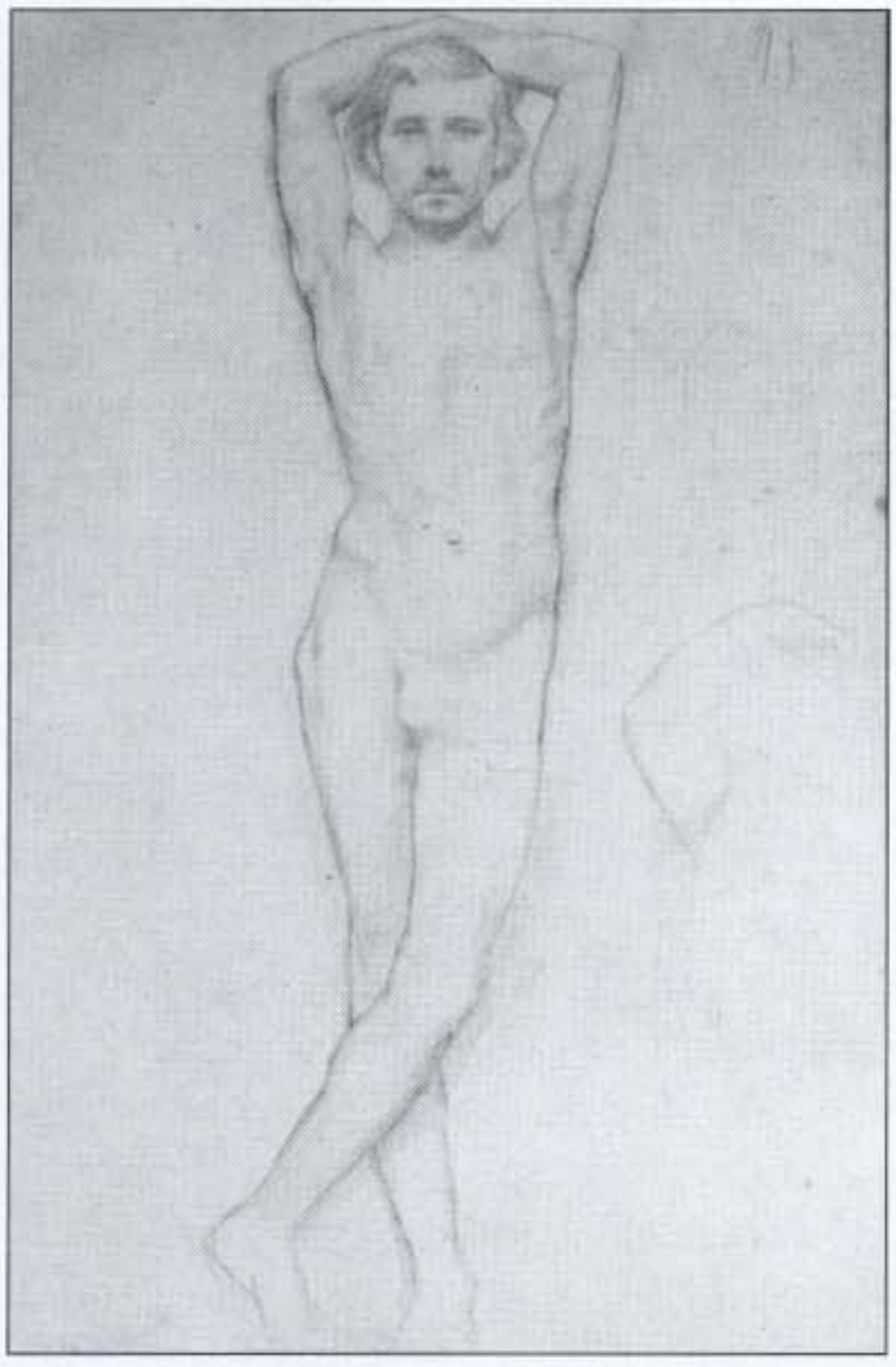


Figure 1.9 Edgar Degas (French,1834–1917), *Standing Male Nude (recto)*, 19th century. Red chalk on paper, 18 × 12 in. (45.72 × 30.48 cm). *Source:* The Nelson-Atkins Museum of Art, Kansas City, Missouri. Gift of Mr. and Mrs. Milton McGreevy, through the Westport Fund (F56–66).

foreshortened segment of a form's edge. The solution is the same in either case: seeing the form or any segment of that form's contour as "flat," that is, as *two-dimensional*, tells you how to show its direction and length on the flat page, as Figure 1.2 demonstrates.

SCALE RELATIONSHIPS

One of the most important (if sometimes vexing) challenges in drawing objectively is getting all the subject's parts in proportion. Getting them right can be made to sound simple and easy: just be sure that all the parts of your drawing are the right size according to each of their positions in the spatial field. Of course, that's just what you want to do, but the question is how. The answer consists of several measuring methods that work together in establishing the right size and location for the parts of a drawing.

One method, already discussed, determines the long axis of an object's angle according to an imagined long hand of a clock face. If, in addition, the line

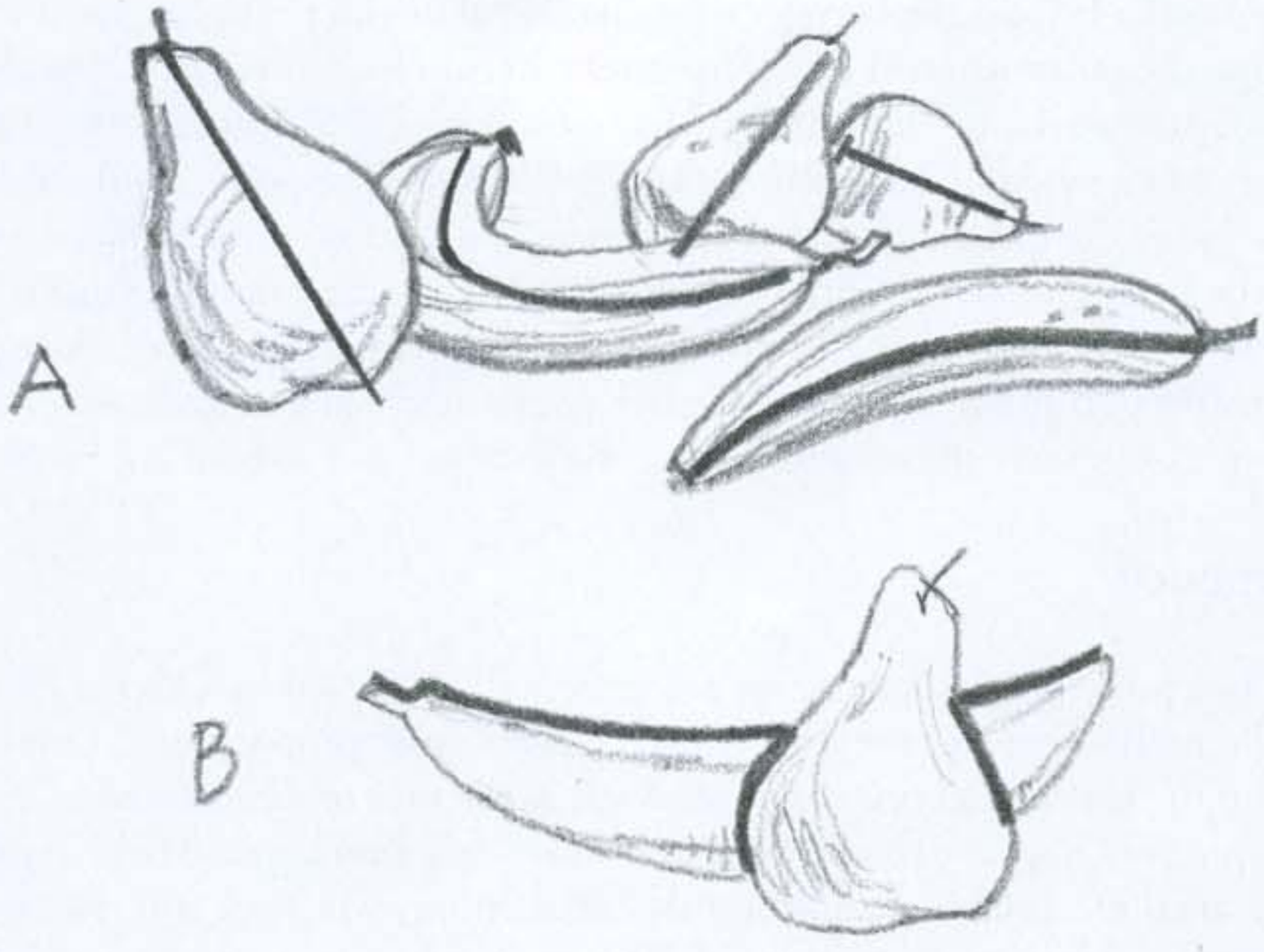


Figure 1.10

representing the long axis also measures that object's length in relation to the lengths of other forms in the subject, it strongly benefits a drawing's overall scale relationships. For example, the three pears and two bananas in Figure 1.10A, each shows a different angle and length of its long axis. Judging wrongly on either the tilt or the length of these centerlines would adversely influence location, scale, or both.

Another important way of helping you to draw a subject in correct proportions has to do with the distance between you and your drawing. Major errors in proportions are sure to occur when we "crowd" our drawings, keeping our head only a few inches away from the page. The fact is we just cannot judge scale relationships well when we are very close to our drawing. Stepping back a few feet will reveal even subtle size discrepancies. Stepping back often in a drawing's early stage is critical as *almost all* of the proportion and direction errors occur in the first few minutes of a drawing.

Figure 2.13 Edgar Degas (French, 1834–1917), *The Violinist*, about 1879. Charcoal heightened with white on blue-gray paper. Sight: 47 × 30 cm ($18\frac{1}{2} \times 11\frac{13}{16}$ inches). Frame: 63.5 × 48.5 cm ($25 \times 19\frac{1}{8}$ inches).
Source: Photograph © 2004 Museum of Fine Arts, Boston. William Francis Warden Fund, (58.1263).

it becomes necessary to make some judgments about the general shapes of your subject's larger forms because a form's shape is the "field of play" within which the form's planes, textures, and values are found. And these too create shapes. Seeing a form's general shape is a necessary prelude to seeing its specific one. The most common means of establishing a shape's general *and* specific configuration is by using line to track its variously turned edges. But line can do much more, as we will see in the next chapter.

Things to Think About

1. What problems may arise if you start a drawing with an exclusive concentration on the subject's contours?
2. What are some of the benefits of a gestural approach to drawing?
3. If a gesture drawing is to serve as an underdrawing in an extended tonal study, where it will be covered over by values and textures anyway, why draw it at all?
4. Name a few forms or subjects that cause you to respond kinesthetically.

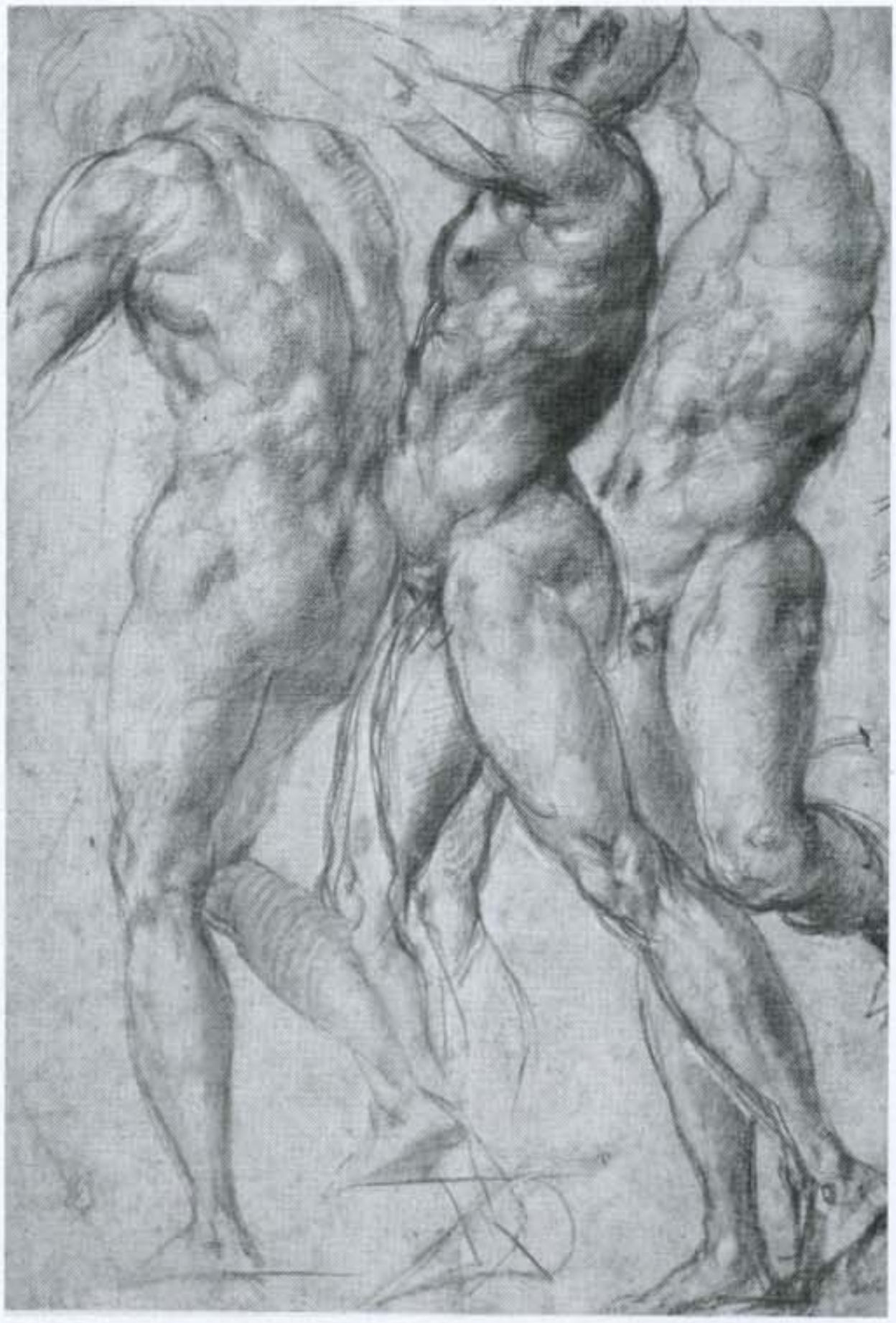


Figure 2.14 Jacopo Pontormo (1494–1557), *Study of Standing Male Nudes.* *Source:* Inv. Pl. 162. Photograph © Reunion des Musees Nationaux/Art Resource, NY.

Critique Considerations

1. Do your gesture drawings continue to emphasize contours? Sometimes this is partly the result of using a pointed instrument like the graphite or charcoal pencil. Try drawing with the side, as well as the tip of a one-inch piece of conte crayon, compressed charcoal, or pastel. The resulting tones will help to move through forms, and also encourages a search for larger rhythmic movements. Remember that a gesture drawing is *not* a very fast contour drawing.
2. When making gesture drawings do you note the various angles of your subject's parts? Searching for a part's long axis (whether you actually draw it or not) should precede drawing the part.

Figure 2.15 Isabel Bishop, *Nude Bending*, 1949. Ink and inkwash on paper, $5\frac{3}{4} \times 5\frac{1}{2}$ inches. Private Collection, Courtesy DC Moore Gallery, NYC.

3. In a one- or two-minute gesture drawing, do you try to include details of edge, textures, folds, or other small facts? This may have to do with an inability to accept the gesture drawing's brief time frame. Think of a gesture drawing as a visual report that must account for the major characteristics of what you see, but you are allotted only one or two minutes to do it. There will be time only for the most inclusive and basic truths about your subject.
4. Are your gesture drawings small-scale, lightly drawn, somewhat "shy" or "wooden?" If so, it may be that you are drawing one form at a time, instead of boldly drawing your subject's essential characteristics. It may also mean that you find safety in edges, in being cautious, and in avoiding a subject's large, sweeping actions and energies. Try drawing larger, darker, and with an eye on the subject's strongest features and movements. Don't be concerned about "making a mess." All good artists do so from time to time. Gesture drawings require sensitive observation *and* some courage. If you succeed in getting three or four out of ten gesture drawings to capture a subject's essential action and character, you're doing well.

3

Line to Shape

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LINES OF MEASUREMENT

Diagrammatic Line

As we have seen, objectively drawing anything you see usually begins with an animated gesture drawing that captures the overall pattern of the subject's parts and at least some general observations about the character of these parts. As your drawing proceeds beyond the gestural stage, it is important to reexamine the various tilts or angles you have given to the subject's parts. Often, in the excitement of extracting a subject's gestural energies, a part may be shown as tilted too much or not enough, and it is important to make such adjustments as early as possible in a drawing's development. Investing time and effort in the drawing of, say, an arm, a spoon, or a church spire, only to find that the form, however well you've drawn it, is headed in the wrong direction is a frustration easily avoided by noting the imaginary line of its long axis. Whether you actually draw such a centerline or only notice its tilt is up to you, but consciously searching for it is the important thing.

Once the angles of your subject's parts are noted, your attention should turn to developing the correct size and general shape character of each part. Doing this doesn't mean you need to avoid noting major planes or divisions within a shape, or even occasionally showing something of the major light and dark values within it. It means the emphasis should be on objectively seeing a part's size and general shape-state. Just as failing to see a part's angle will create a major problem later in the drawing's development, so will failing to see a part's scale and actual shape configuration—its "silhouette"—do the same. No matter how much you go on to develop that part's inner conditions of planes, values, textures, and details, none of that will outweigh the damage to the objectively oriented drawing as does a form's distorted size and shape. And diagrammatic lines are ideal for starting the process of seeing a form's shape-actualities, and then, using shorter diagrammatic lines, to "close in" on a shape's silhouette.

The scale, angle, and shape of a part are usually indicated by lightly drawn, schematic lines, often called diagrammatic lines. In fact, such lines often play a part in a drawing's gestural stage (Figure 3.1). But whether or not they do,

Figure 3.1

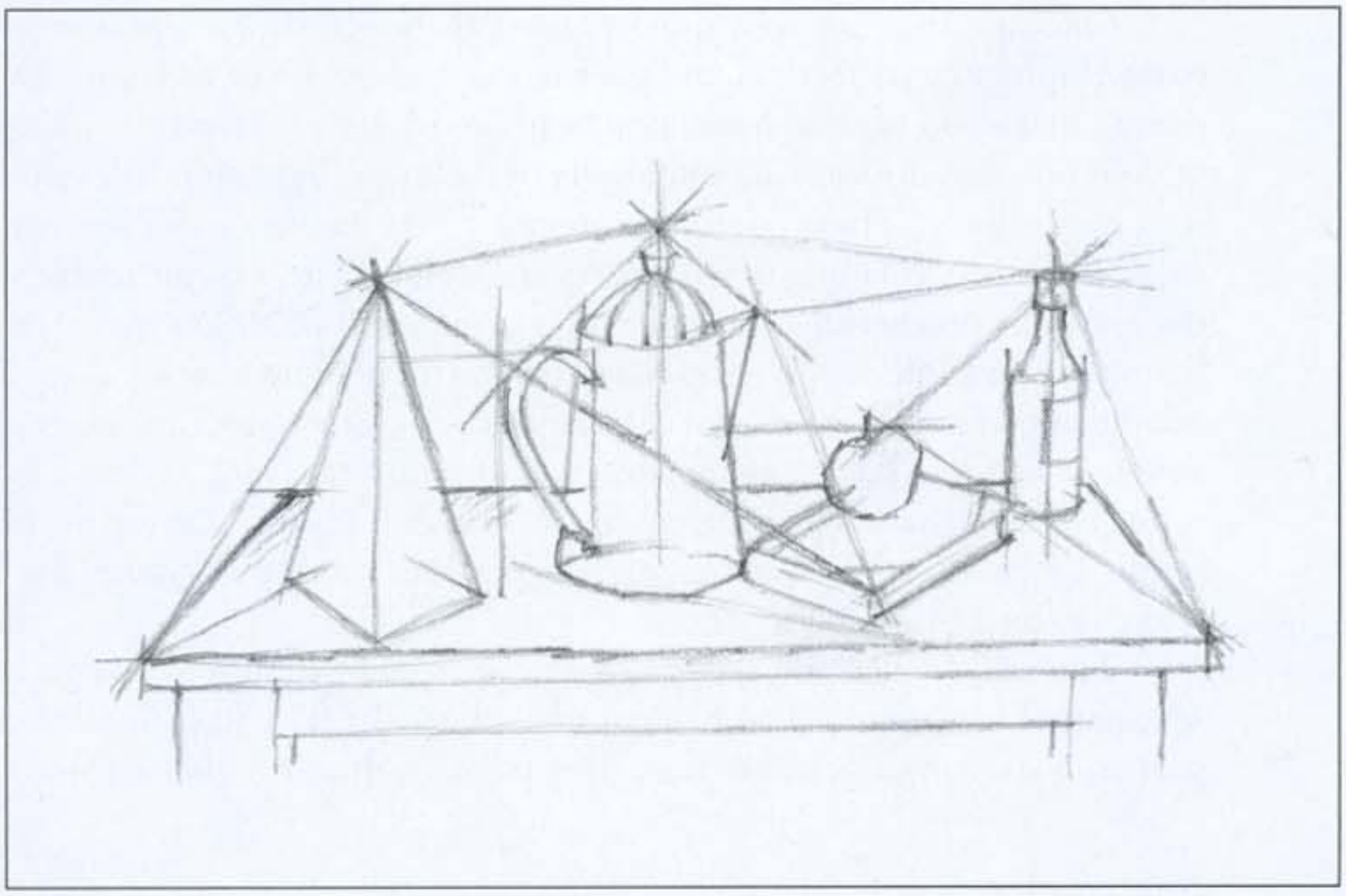


Figure 3.2

diagrammatic lines often lead the way out of the gesture drawing toward more deliberate measurements and judgments of the subject's parts. Diagrammatic lines can find the relative height among parts, can determine the distance separating one part from another, and can determine the location, scale and, of course, the shape of parts (Figure 3.2).

> ***In objective drawing the shapes of the spaces separating parts ... must be seen with the same degree of inquiry we give to seeing the shape of the parts themselves.***

Practicing what diagrammatic lines can help you find is very useful in sharpening your observational skills. In Duchamp-Villon's study (Figure 3.3), you can see diagrammatic lines measuring height, location, and proportion. Notice that the artist uses thicker lines to rough in the general shape character of the figure's forms. These heavier lines are partly the result of repeatedly going over a shape's boundaries, making subtle adjustments that get at the shape's main turnings, and partly as a result of emphasizing and distinguishing the figure's forms from the web of encircling, lighter diagrammatic lines. Note, too, that most of these heavier lines are straight. In Chapter One, we saw that analyzing edges by using straight and curved lines clarifies what segments of edge really .

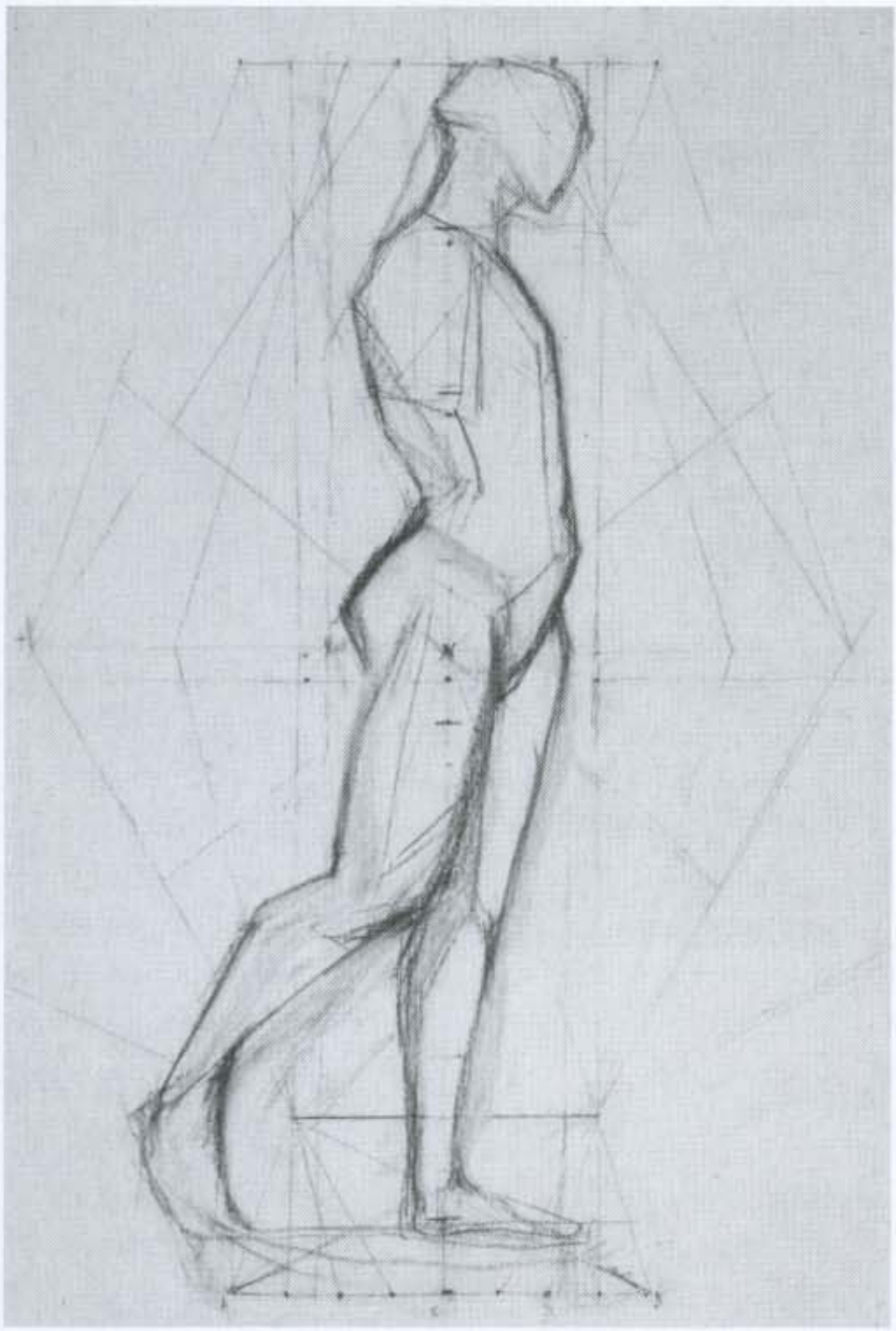


Figure 3.3 Raymond Duchamp-Villon (1876–1918), *Nude man, Proportions Study*. Charcoal on paper. AM 2053 D. *Source:* Photograph © CNAC/MNAM/Dist. Reunion des Musees Nationaux/Art Resource, NY.

look like (see Figure 1.7). However, when doing so, many artists favor using more straight than curved lines for this analyzing process. They do so for two reasons. First, because all curves can be broken down to the several straight lines of which they are composed, artists have more control when using straight lines in determining the subtleties of a curve. By submitting a curve to the "test" of first drawing it as a series of straight lines at subtly changing angles, the resulting lines will, of course, more accurately suggest the particular path of the curve, which can then be drawn over by lines that are actually curved (Figure 3.4).

Figure 3.4

Second, because this kind of analytical seeing takes a little more time and effort than a general, "sketchy" approach, the drawing's subsequent development strongly benefits from what the artist has found. This is so because once the subject's "scaffolding" is established, the artist can more accurately and authoritatively draw the rhythms and actions of the subject than can be achieved by the less demanding, sketchy manner. This can be seen in Figure 3.5 where some parts of the figure still show the drawing's earlier, more analytical approach, while other parts, having been carried further, have benefited from the straight-line inquiries

Figure 3.5

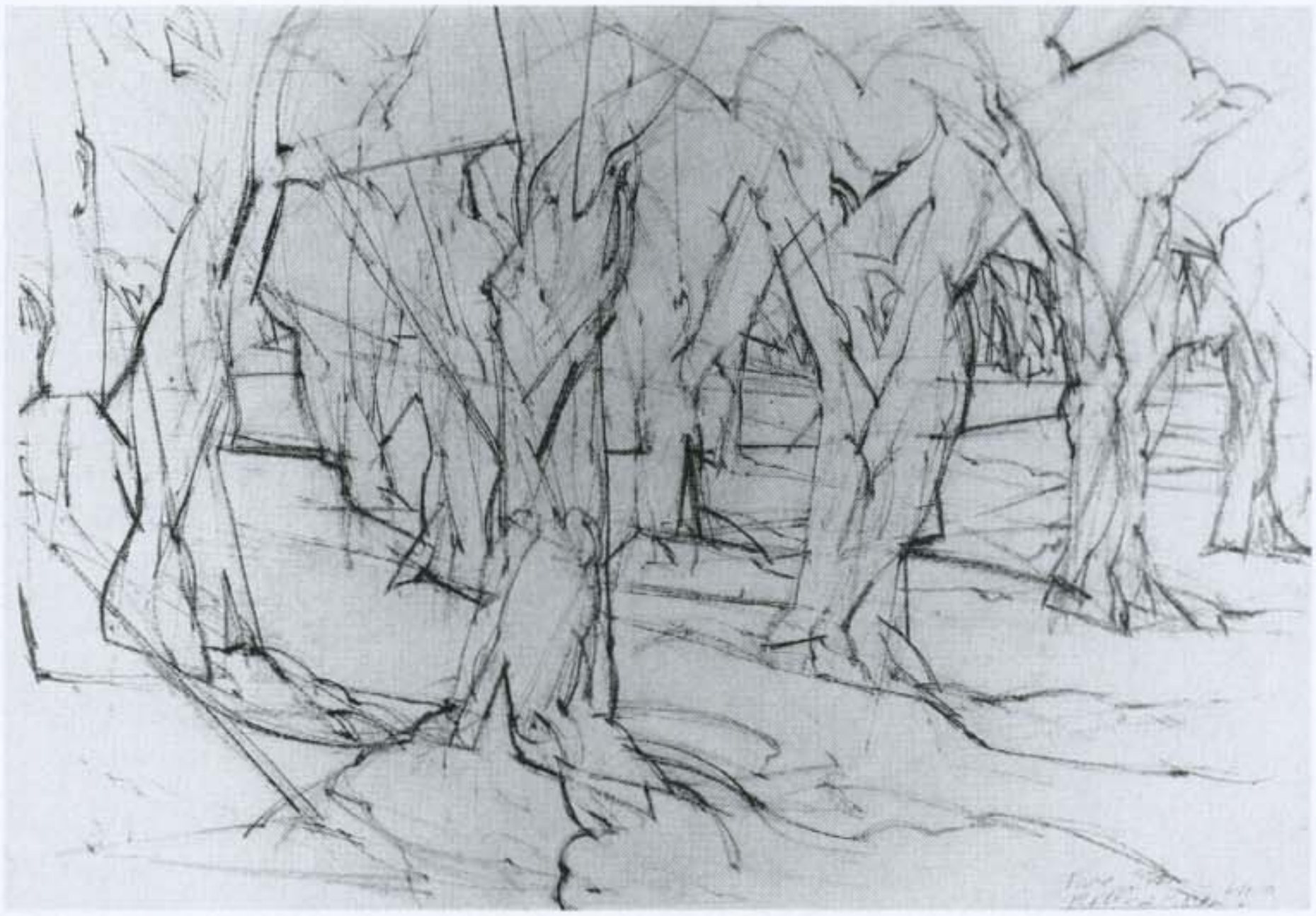


Figure 3.6 Conley Harris, *Matisse Garden, Nice, France*. Charcoal, 1970. Reproduced courtesy of the Boston Public Library, Print Department. By permission of the artist.

that underlie them. Although diagrammatic lines are generally used in a work's underdrawing stage where they establish vital information about location, proportion, and shape, some artists use this kind of line as their sole means of graphic expression. As Figure 3.6 shows, diagrammatic lines can convey strong energies and a resolute manner.

What this drawing also shows is the artist's awareness of the interspaces between the trees. In objective drawing the shapes of the spaces separating parts, or *negative shapes*, must be seen with the same degree of inquiry we give to seeing the shape of the parts themselves (the *positive shapes*). Here again, diagrammatic lines can play an important role in seeing the shape-actualities of interspaces, as in Figure 3.7. Note that only some of the negative shapes are entirely enclosed by positive ones. Others, encircling the outer boundaries of positive shapes, are shown here as being completely enclosed themselves, in order to make them more readable as shapes. In fact, when drawing a form's shape, it is as important to see these outer, surrounding negative areas as those fully enclosed ones. If you can imagine (or even temporarily draw lightly) an enclosing outer boundary to these otherwise open-ended shapes you will more easily be able to see them as shapes, as Figure 3.7 shows.

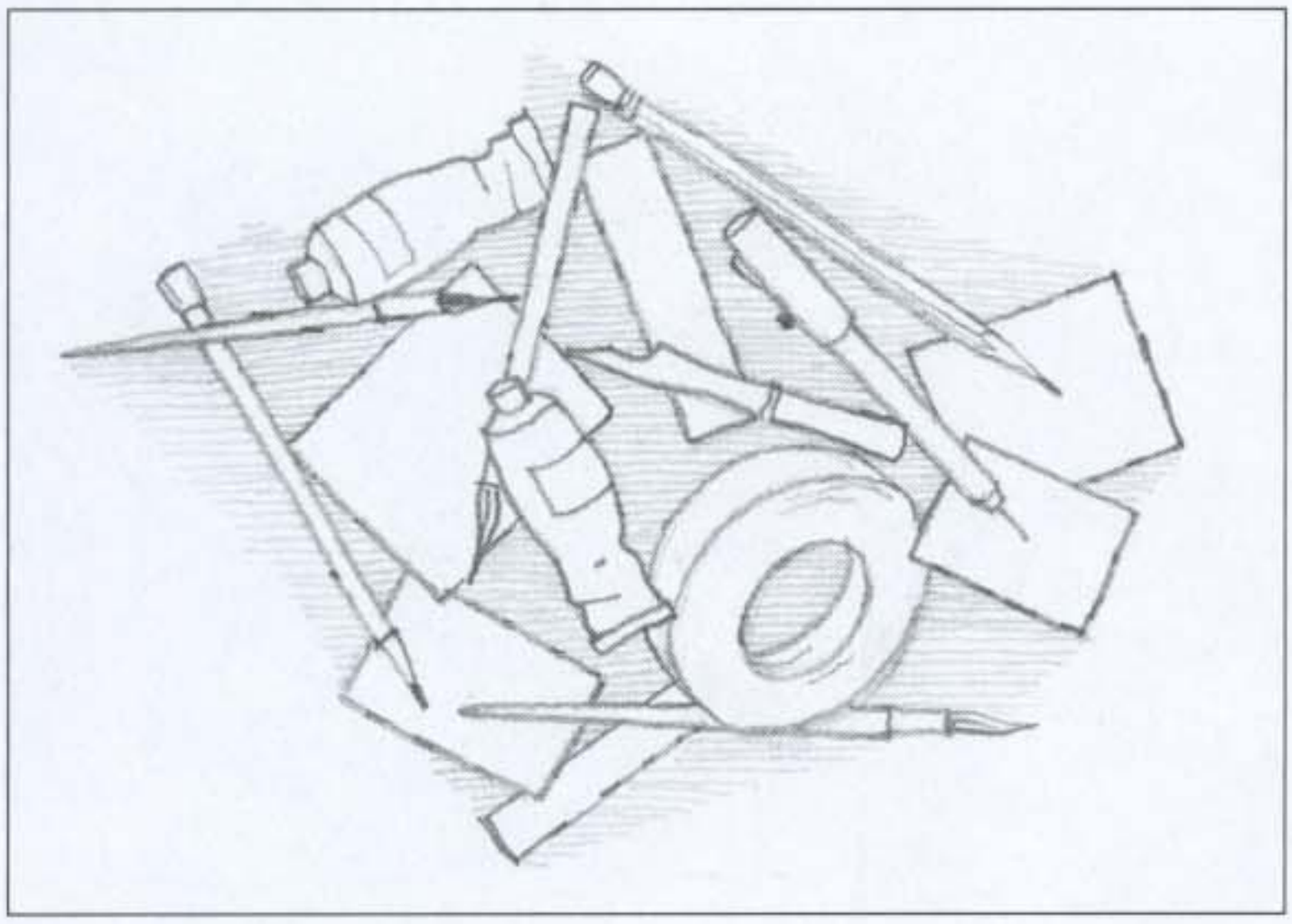
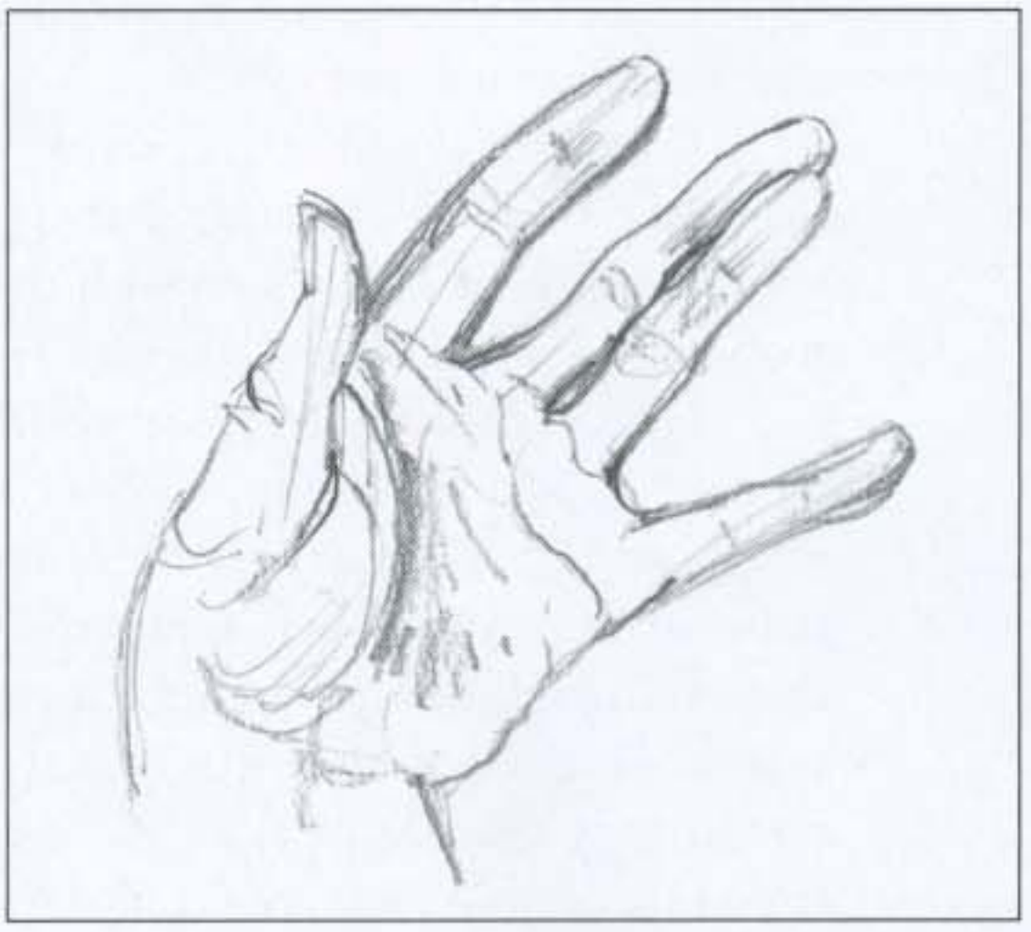


Figure 3.7

And seeing the configuration of these adjacent, negative shapes is necessary to accurately seeing the shapes of the subject's forms because *they share a common boundary*. As Figure 3.8 illustrates, distorting the spaces between the fingers makes the fingers distorted, too.

Another benefit of concentrating on the boundaries of negative shapes has to do with our tendency to often draw convex turnings more accurately than concave ones. But when a concave passage of a form's contour is seen "from the other side,"

Figure 3.8



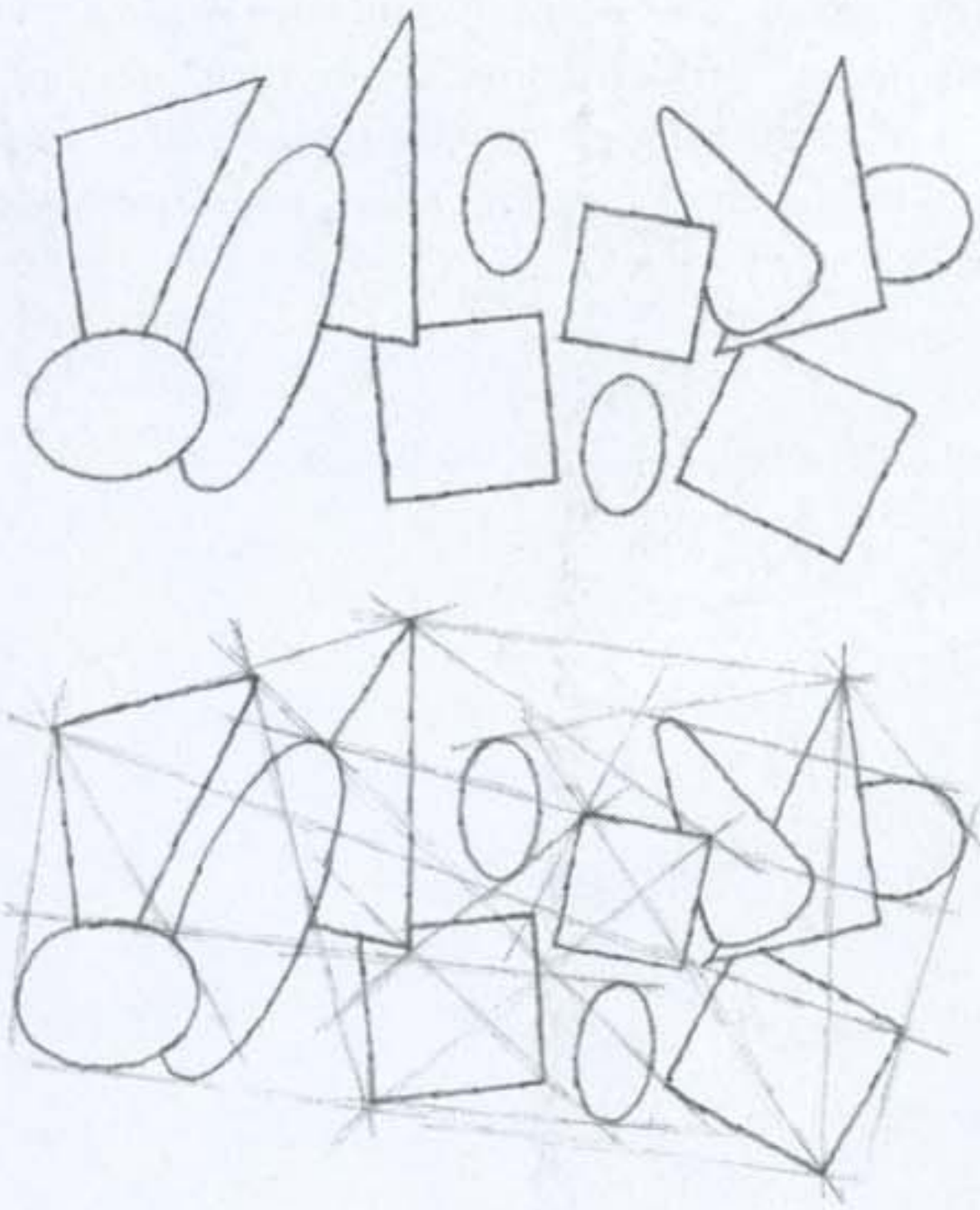


Figure 3.9

that is, as the convex passage of an abutting negative shape, we are more likely to make the subtle adjustments that make that passage more true to our subject's shape-actualities.

An additional function of diagrammatic line has to do with the sometime overlooked "line": the alignment of a subject's parts. Lightly drawn, sweeping diagrammatic lines that run from one part to another are ideally suited to quickly find the angle, size, location, and height relationships of parts. Although seeing how parts are aligned plays an important role in a drawing's gestural stage, it is still necessary to "fine tune" your judgments about these measurable matters, as Figure 3.9 shows.

Structural Line

Related to diagrammatic lines are those versatile lines that explain the volumetric and even tonal condition of surfaces: *structural lines*. We will meet these lines in Chapters Four and Five and see how convincingly they can convert shapes into solid masses. But here it is useful to note that these two kinds of line, often

working together, although they can convey strong expressive character, are mainly the more inquiring, "finding" kinds of line. They measure and explain (Figure 3.10). Other kinds of line, although they do their share of finding and explaining, are more driven by the artist's feelings about and experiences with a subject's spirit and substance.

Figure 3.10 Harriet Fishman, *Mark II*. Black chalk, $8\frac{1}{2} \times 10$ inches.

EXPERIENTIAL LINES

We have seen how a form's shape can be objectively drawn by first noting its general shape and then closing in on its more particular turnings by mainly straight-line segments. Another way of becoming sensitized to the various, and often subtle turnings of a shape's configuration is to practice what is commonly referred to as the *blind contour drawing*. Once you have made several such drawings you should go on to make several *controlled contour drawings*. These two exercises will strongly contribute to your ability to see what contours really look like.

Contour Exercises

Blind Contour. Select for your subject a figure, either draped or nude, your own unoccupied hand, almost anything made of leather (a jacket, glove, boot, or the like), a houseplant, a doll, or other objects of an organic nature. For blind contour drawing, start by placing your pencil on the page at a place that represents any point you choose on the subject's outer contour. Next, look up to find that point on the subject's contour and begin to *slowly* draw that edge as your eye *simultaneously* moves along the form's contour. Your eye and hand are doing the same thing at the same time. Do not look at your drawing or lift your pencil at any time during this exercise.

As you do this try to feel that your pencil tip is actually touching the subject's edges at the instant that your eye is "touching" the same edges, and that you just can't move one without moving the other. There are four unbreakable rules in this exercise: do not look at your page until the drawing is ended, do not lift your pencil until the drawing is ended, do not speed up the line, and do not begin to draw until you are able to feel that your eye and your hand are *one* and can only move *together*. If you break the first rule you will be amused (or alarmed) by the drawing's often outrageous distortions. If you break the second rule you are likely to lose your way. If you break the third rule you will miss most of the form's subtle turnings. And breaking the fourth rule loses the entire point of making a blind contour drawing in the first place. Breaking one or more of the first three rules will break your concentration on the fourth rule: to convince yourself that your eye and hand are locked together and can only move as one unit.

Once you have experienced the rather pleasant sensation of the eye and hand doing the same thing at the same time you will begin to more fully understand the eye as inquirer and the hand as servant. There is no strict time limit on such a drawing, but it is difficult to keep up this kind of intense concentration for more than fifteen minutes.

The key to getting the most from this exercise is drawing *slowly*. The more you are determined to see and draw every slight change in the contour's turnings, the

slower your eye and hand will move. Again, the best way to do this is by imagining that your pencil is actually touching the form's edges.

But working against this is our natural desire to "get on" with any task. Often, before you are aware of it, your line has begun to speed up and the drawing has become more generalized. It takes some discipline to stay concentrated on finding every nuance of change in the subject's edges, and in holding on to the notion that your eye and hand can only move together.

The completed drawing will look very strange! Although the line will probably suggest a caring and sensitive quality and will be free of mannerisms, it will appear to waver (especially if you have been sensitive to noting the smallest changes in the contour); it may cross over itself now and then, and even intrude on another part of the contour. The positions and proportions of parts may vary wildly. That's normal. In fact, the more your drawing shows these characteristics, the more likely it is that you've fully experienced the sensation of the eye and hand moving as one. And that is important because once you have felt this simultaneity of movement you can better understand how the eye gives commands to the hand.

As you go on with the study of drawing what you see, making observations *before* you draw them, the marks you will then make will reveal a sensitivity to what your eye has experienced. And that is what the next exercise is all about.

Controlled Contour. Of course, it isn't possible to control a drawing if we cannot look at the page to see if what we have seen has been accurately set down. However, the experience of the eye and hand doing the same thing at the same time is the essential prerequisite to having them do it in sequence. Once your hand has "learned" to record what your eyes are seeing, your hand can wait until your eyes have seen a few contour turnings before it draws them, with your eyes now on the page, to see that your hand is doing what it has been told to do. But just as it is nearly impossible to hear nine or ten numbers or sounds and correctly repeat them, so is it as unlikely to see that many turnings in a contour and then draw them accurately. In fact, drawing even four or five changes along an edge from memory is seldom possible. In a controlled contour drawing, noting two or three turnings at a time is about all one can observe and then accurately draw.

Begin by selecting a new view of the subject used for the previous drawing. Lightly rough in a rather spare gesture drawing, that is, one reduced to only what is necessary to establish the tilt of parts, their proportions, and a few faintly drawn generalities about shapes, as in Figure 3.11A. Using this rough sketch as a guide, place your pencil on the page, at a point where you wish to begin the contour drawing. But keep your hand stationary as your eye first examines only the first two or three contour turnings. Then, with your eyes turned back to the page, draw only

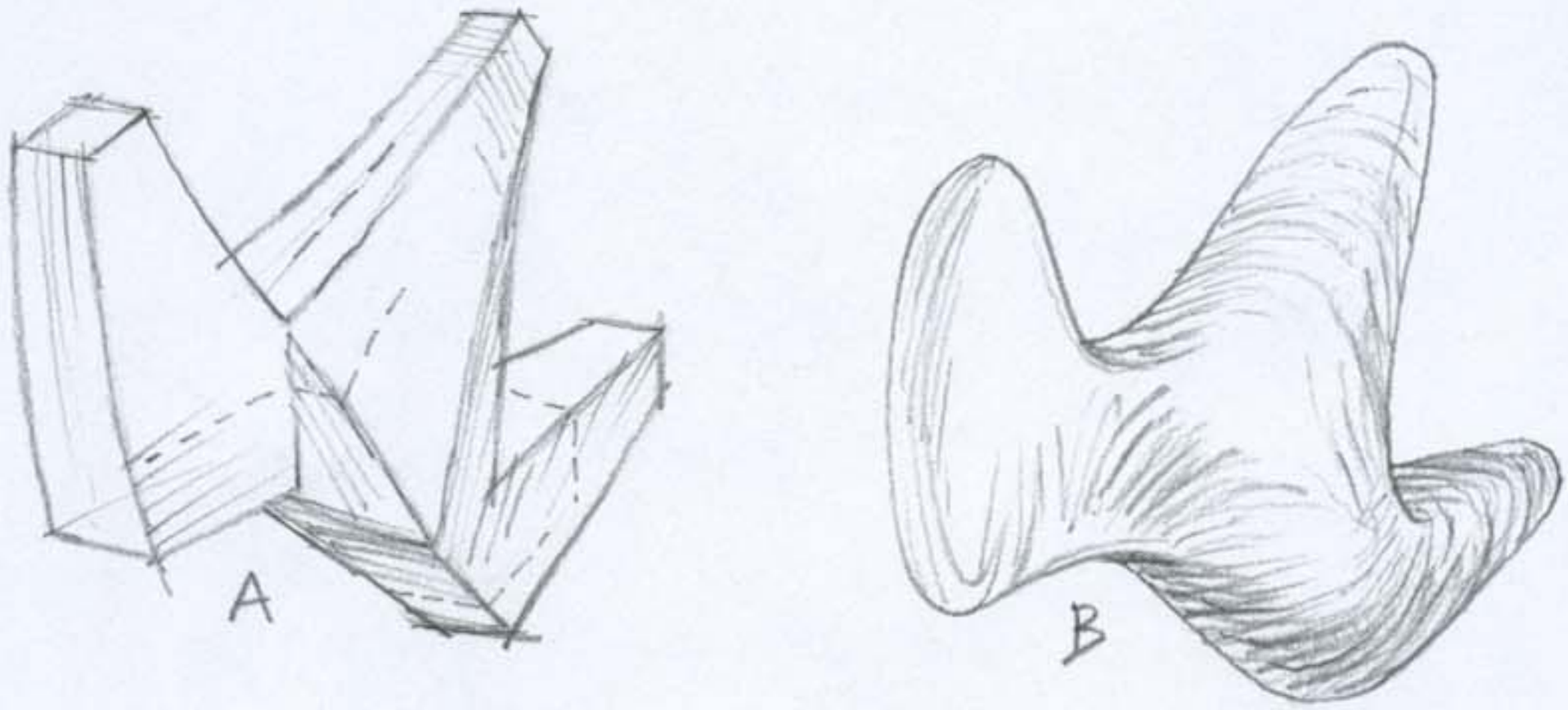


Figure 4.6

possible to proceed further with a drawing intended as an objective representation of something encountered. Here, though, we leave off charting the shoreline of forms and move overland to explore their terrain, where new inquiries and challenges await.

Earlier you were asked to consider line for its more analytical functions before turning to its more experiential possibilities. Here, too, we will examine planes in more analytical, structural terms (Figure 4.6A) before going on to experience the "roller-coaster ride" of the surfaces of many forms (Figure 4.6B).

On the page, some shapes seem not to lie flat but to be positioned at various angles in space, giving them the appearance of planes. But a minimum of two planes is necessary to give a clear impression of a form in space (Figure 4.7). As you begin to examine the surface structure of the things around you, you'll see that many forms show quite complex surface conditions. Plainly, you need some means for understanding and organizing these conditions in order to draw whatever interests you in a convincing way.

Once again, the best means for doing so have to do with seeing your subject's general features before turning to its specific ones. Just as gesture drawing depends on seeing a subject's essential actions and essential form characteristics, so does modelling a form's surfaces begin with seeing its essential structural nature. Seeing the wedge that underlies a foot, the disk that underlies a daisy, and the cone that underlies a Christmas tree are useful concepts that start us on the right road to showing those forms in convincing volumetric terms (see Figure 4.14).

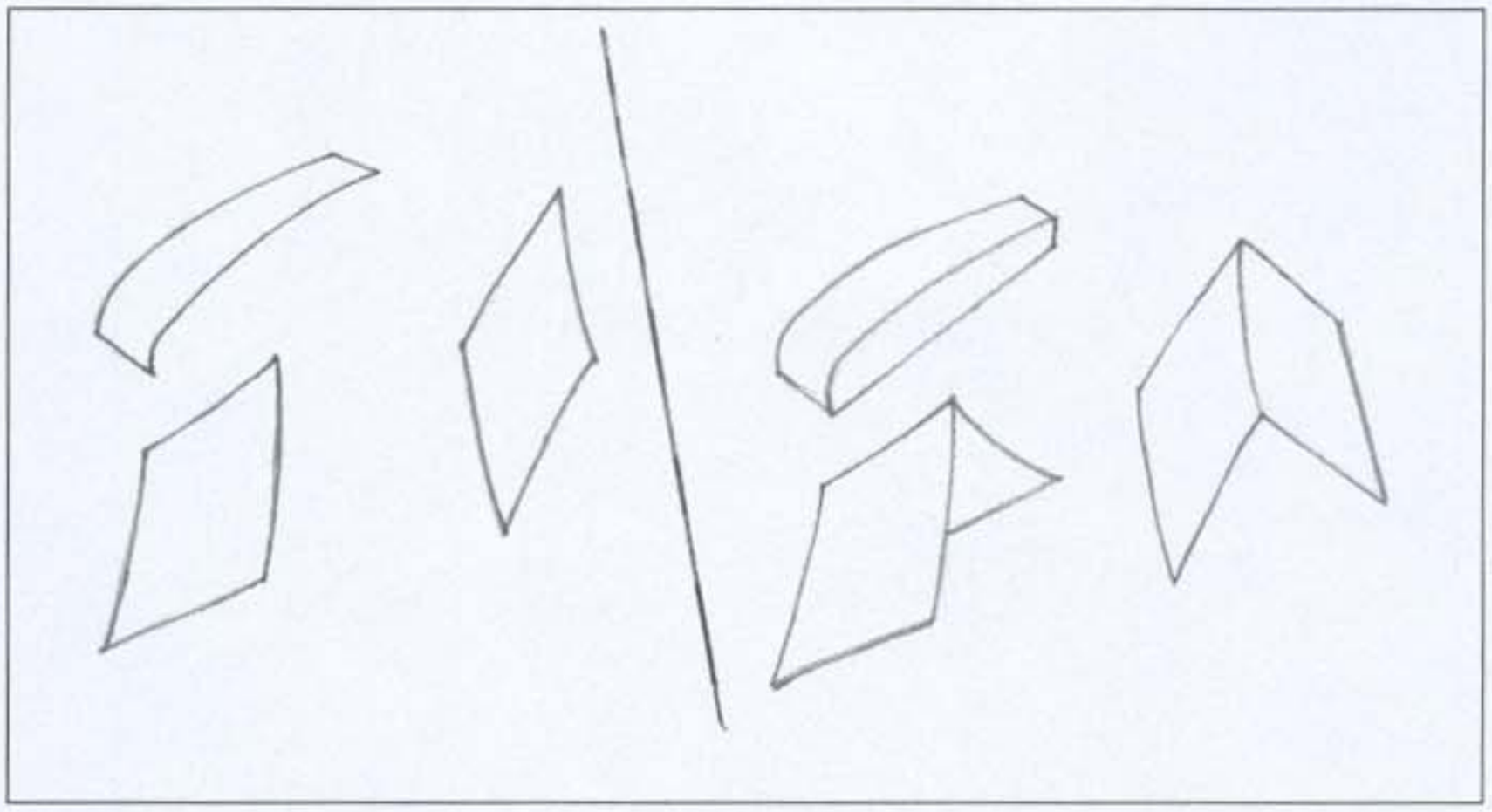
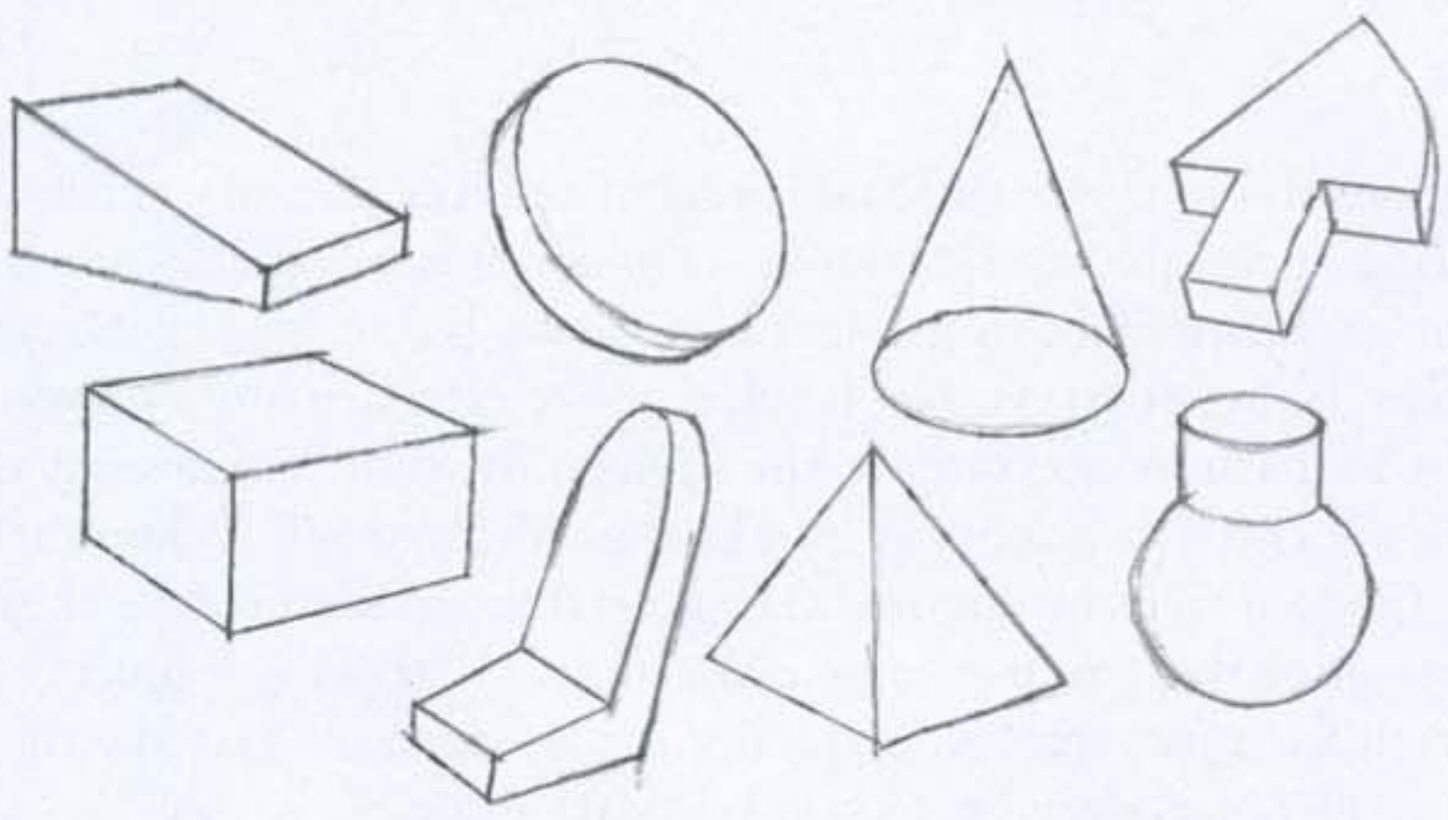


Figure 4.7

All forms fall into one or the other of two categories. The wedge, cylinder, and cone, along with the block, pyramid, cylinder, and sphere, as well as forms made by combining or modifying these simple structures, are called *geometric forms* (Figure 4.8). Other forms, more often found in nature, such as human and animal forms, rocks, clouds, clothing, foliage, fruits and the like, are called *organic* forms. Almost always, organic forms are more complex than the more "pure" geometric forms, made up as they are of many smaller, often subtle turnings and textures.

Figure 4.8



and basic form character, that is, its gestural condition, before finding its smaller ones, so must you see a subject's general distribution of values before searching out its subtler tonal variations.

Holding in mind the three-value system of analysis helps to rough in a subject's essential value condition (there *are* subjects and creative purposes that justify seeing a subject in two or in four values, but more of that, later). It is important to recognize that in establishing these lighter and darker tones you are also noting the general *shapes*, *sizes*, and *locations* of the subject's values. And while these observations have mainly to do with two-dimensional matters, that is, with the size, location, and shape of values are on the page, these values already suggest a little of the subject's surface structure as Figure 5.7B demonstrates. Notice that squinting at Figure 5.7A simplifies the values you now see and "justifies" the broad laying in of the values in 5.7B.

Figure 5.7A

Figure 5.7B

Figure 5.7C

Note, too, that squinting at a later stage of the drawing (Figure 5.7C) again produces the general value distribution in both 5.7A and 5.7B.

Because light rays do not bend, we understand the subject's lighter and darker areas of illumination to be revealing changes of direction in the form's surface, and not in the direction of the light rays. When a surface faces parallel to the path of the light, it receives only some illumination, usually represented by a light value. This raking light, moving in the same direction as the surface, is often referred to as a *half-tone*.

Knowing that every value change indicates a change in surface terrain alerts you to the importance of these changes in modelling convincing volumes. Abrupt value changes on a form suggest the abutting or overlapping of flat planes. Gradual value changes suggest rounded planes (Figure 5.8).

THE SUBJECT ILLUMINATED

For most artists there are four main ways in which they like to see light strike solid masses: from one side (by either a high or low source on that side), from directly above, from two sides, and frontally. Forms lit from below are unusual and sometimes appear rather theatrical, although some artists are attracted to this kind of illumination; and forms lit by several light sources often tend to obscure, rather than explain the forms.

1. Light coming from one side will rake over a form, striking any plane aimed in its direction. If the light is located high on the side, it will also strike planes tilted upward to some degree. If the light is low on that side, it will strike planes tilted downward to some degree (Figure 5.9A).

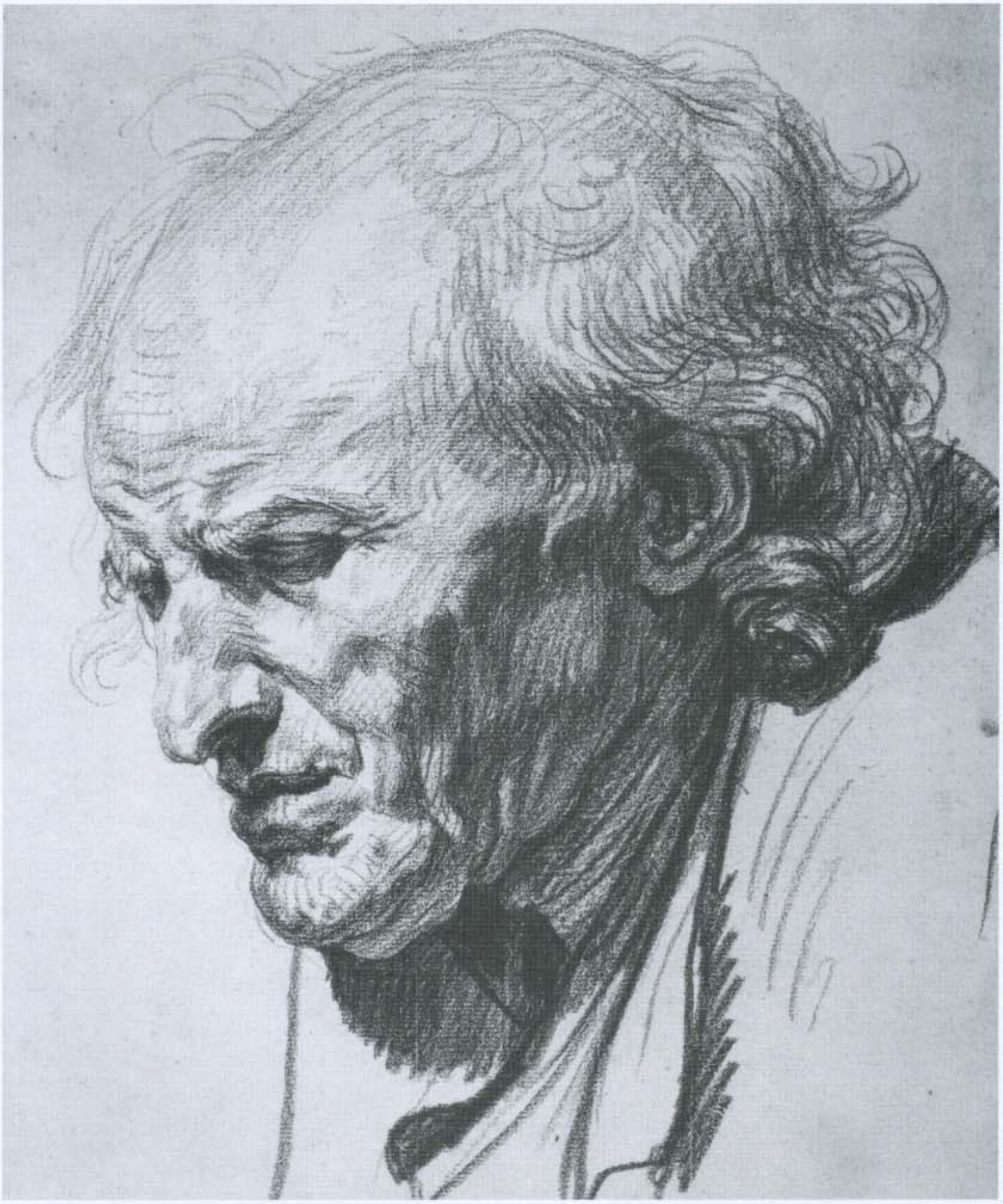


Figure 5.8 Jean-Baptiste Greuze (French, 1725–1805), *Study of the Head of an Old Man*, about 1755. Red chalk, 39.7 × 32.1 cm ($15\frac{5}{8} \times 12\frac{5}{8}$ inches). Courtesy of the J. Paul Getty Museum, Los Angeles, CA.

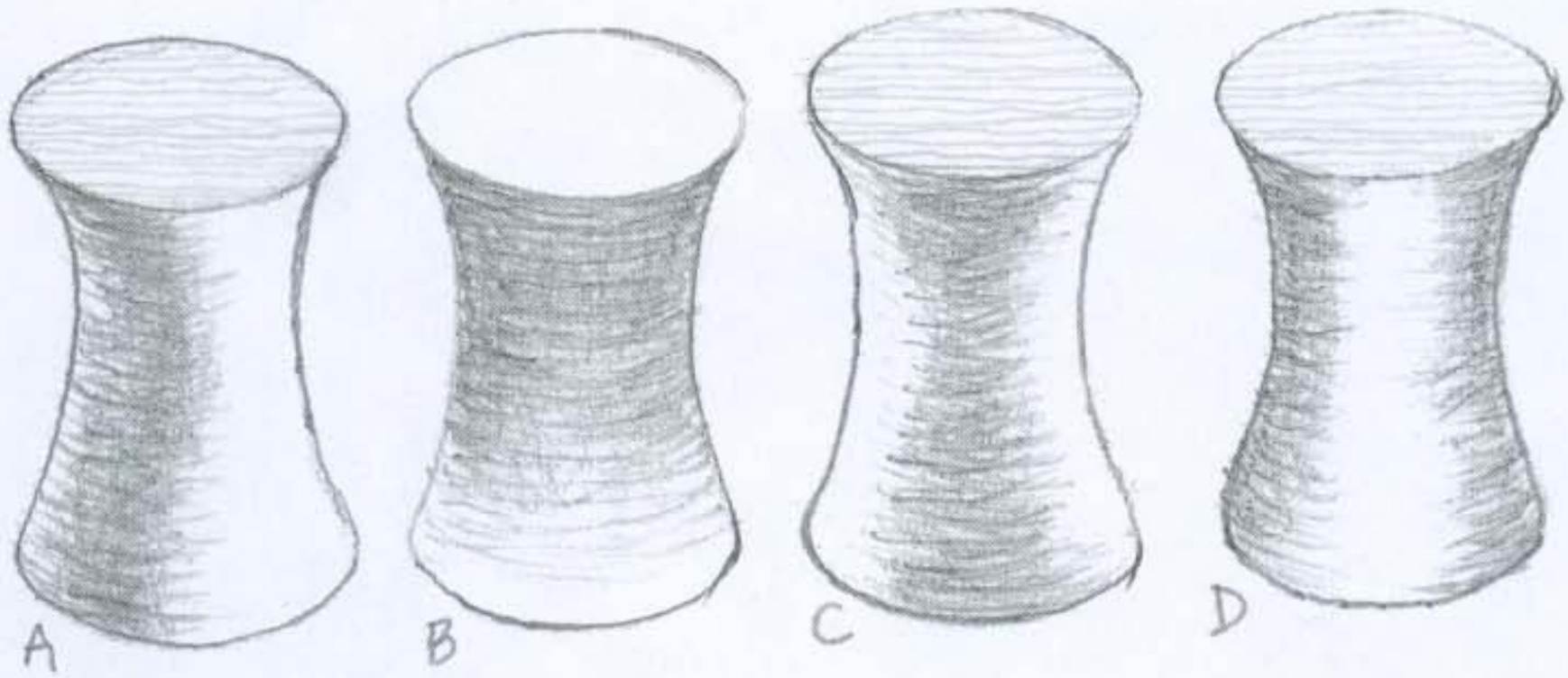


Figure 5.9

2. Light falling from above will strike upward facing planes or projections (Figure 5.2 and Figure 5.9B).
3. Light striking both the left and right sides of a form illuminates planes aimed in either direction, leaving the planes facing the artist somewhat darker (Figure 5.9C).
4. Light striking a form straight on, strikes the planes facing the artist, and leaves both sides of the form somewhat darker. Such a light source can be thought of as coming from a direction just behind the artist (Figure 5.9D).

In practice it is seldom that light strikes forms *only* from the side or *only* from above. True side lighting would only come from a lamp or other source placed off to one side, more or less at your eye-level, as you would view the subject, also placed at eye-level. True overhead lighting would exist out-of-doors only at noon, and indoors, by placing the subject directly beneath a ceiling light source.

Usually a form, indoors or out-of-doors, is lit by *two* light sources. Indoors, because ligh falls from the ceiling, from a floor lamp, from a window, or from a table lamp, there is light from above and from the side. The forms then receive light from two sources, as illustrated in Figure 5.9A. Outdoors, the sun, except at noon, falls from one side in the morning and from the other side in the afternoom, as well as from above. Although Figure 5.10 may have been drawn indoors or outdoors, the light plainly falls on the puppet from above *and* on the (puppet's) right side. Notice the strong cross-hatching on the head, and that the artist uses a very light middle tone and a very strong dark tone. Doing this implies a strong light source.

Figure 5.10 Arthur Polonsky (1925–), *Puppet Portraits IV,* charcoal, 1993. Reproduced courtesy of the Boston Public Library, Print Department, by permission of the artist.

Compare this drawing with Figure 5.6, where the light source is less intense because the middle tones are given a much greater role to play.

Another feature in Polonsky's drawing has to do with the differing degrees of completion among the parts of the subject. He makes much of the puppet's head, but only broadly suggests the shirt. Even the puppet's hair is left as one light value. As many of the drawings in this book attest to, it is only occasionally that the artist brings every part of the drawing to the same level of completion. Sometimes it has to do with compositional matters, as we will see in Chapter Seven; sometimes, with preparatory or expressive purposes; and sometimes with the wish to stop when the artist feels that his or her goal has been reached.

From the six planes of a block to the countless number of planes in the human head, every form has its unique structure. Changing the light source on a form changes how the light explains (and sometimes obscures) the form, but the form's structure, of course, remains the same. Because tonal modelling can explain both the form's structure and how the form is lit, these two considerations often work well together.

Ideally, the value changes observed in your subject reveal both changes in its surface terrain and in the direction of the light falling on those surfaces. But when existing light conditions do not show important planes and turnings, or when the

light obscures or "denies" a form's structure, either because of weak or multiple light sources, or by cast shadows that camouflage or fail to show surface changes, you should consider introducing tones that do explain the form's turnings. After all, light falls upon matter in an incidental and uncaring way. It is up to the artist to clarify the volume and space conditions of the subject. The nature of a subject's form in space is its first truth.

Sometimes a form can be further clarified by using reflected light, that is, light that bounces off nearby surfaces to strike those planes of a form that are turned away from the initial light source. Light waves *do* travel in straight directions, but only until they strike some obstacle, when they are deflected back in the general direction of the light source, as Figure 5.11 shows. Note the reflected light on the heads in Figures 5.6 and 5.10. As these two drawings demonstrate, reflected lights are almost always weak and usually shown as no lighter than half-tones.

> ***... it is often the case that the darkest tone on a form will not be at the form's edge but nearest to the strongets light on the form.***

Because the light striking a subject often reflects from one part to another, or from a nearby surface, reflected lights are a fairly common occurrence. As a result it is often the case that the darkest tone on a form will not be at the form's edge but nearest to the strongest light on the form. Rounded forms show this effect most clearly. This occurs because the reflected light, weak as it may be, is illuminating the far (dark) side of the form, as in Figure 5.12 and 5.13. In the Millet drawing, notice how reflected light illuminates the bottom part of the hay on the wagon, placing the darkest value on the hay nearest to the topmost plane illuminated by sunlight.

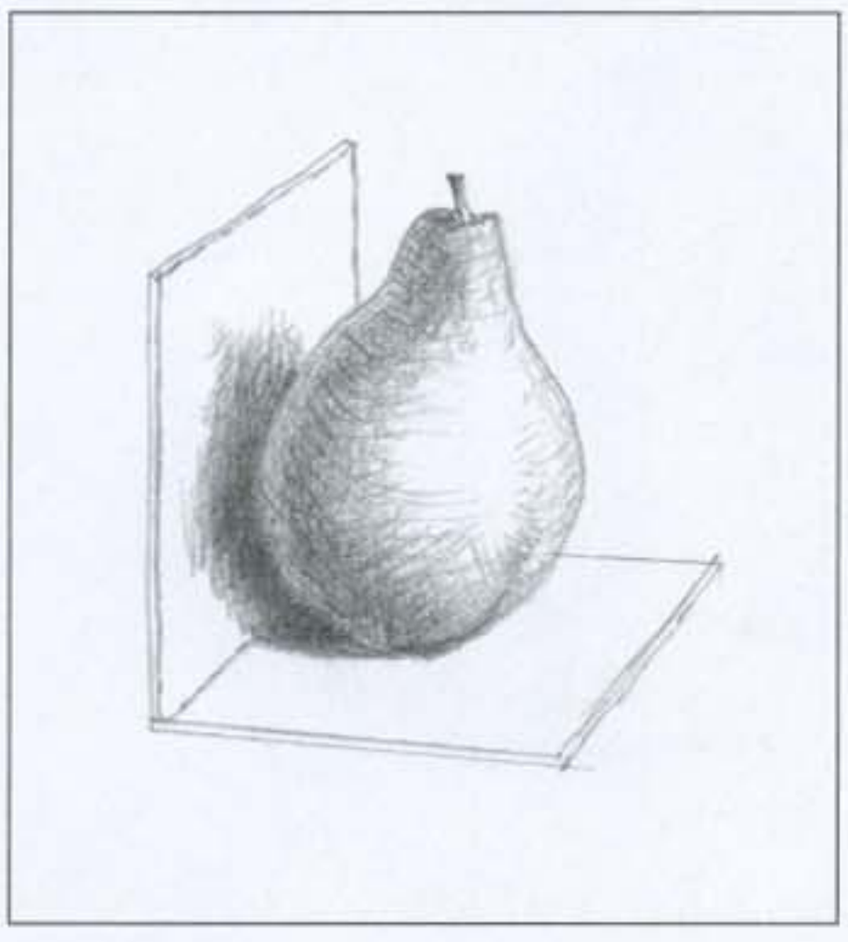


Figure 5.11

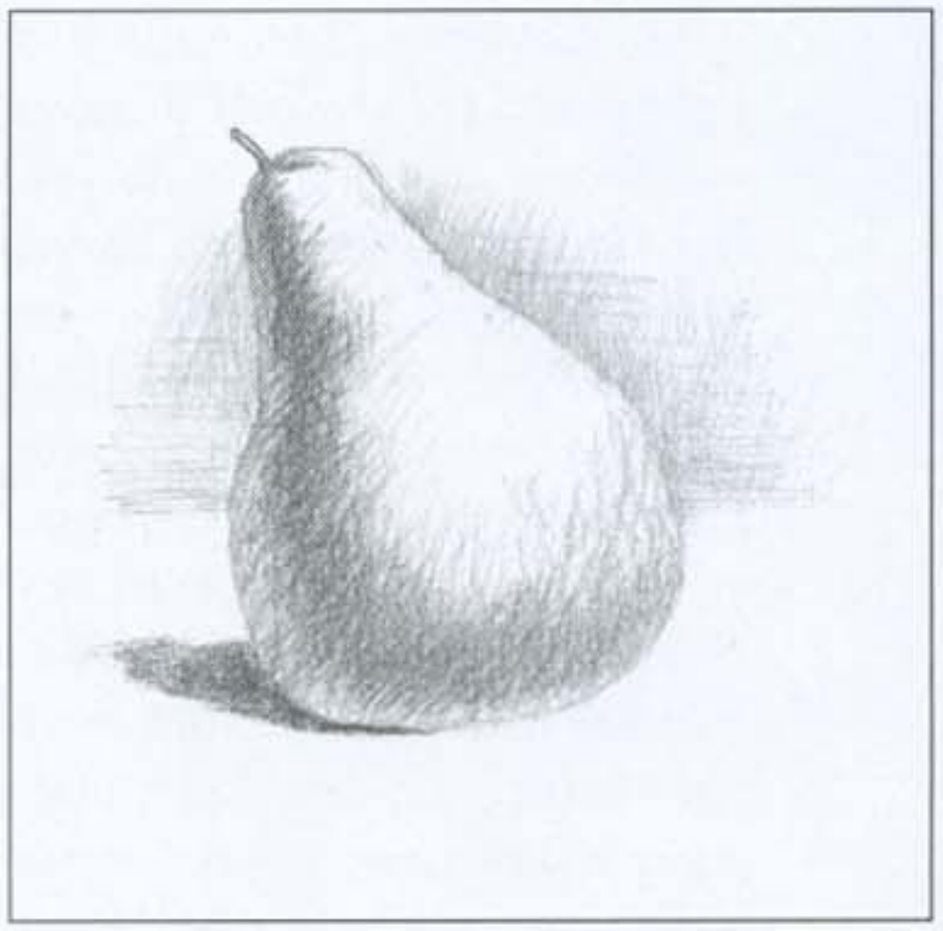


Figure 5.12

Figure 5.13 Jean-François Millet (French, 1814–1875), *The Gleaners*. $11\frac{1}{4} \times 9$ inches.
Source: © Copyright The British Museum, London.

This phenomenon can be seen again, on the left sleeve and on the skirt of the central figure.

Millet's drawing demonstrates another characteristic of drawings that rely heavily on value to make their point: the lessened use of contour line as the means for establishing shapes and planes. In this drawing, Millet frequently explains an edge by placing a dark tone up against a light one. The dark skirts of the three figures are shaped much less by line than by meeting up with the light value of the field. Note how, in the central figure, contours almost disappear as she is shaped by the encircling dark tones, and how the dark side of the wagon's hay load meets the illuminated side and top planes without the benefit of defining contour lines.

Even though most subjects readily take to a three-value analysis, some artists, especially those intending a less tonal drawing, will begin by seeing their subjects as divided into two value categories (Figure 5.14), or, if intending a more fully toned drawing, into four (Figure 5.15). In Korman's drawing, the light and dark grays of the blanket, which reappear on the wall and pillows are important tonal (and

Figure 5.14 Calvin Burnett, *Baby's Head.* Gouache and opaque color on darkened surface. Reproduced courtesy of the Boston Public Library, Print Department, by permission of the artist.

Figure 5.15 Ira M. Korman, (American, New York, 1962–) *Sweet Virginia*, 1994. Charcoal on paper, $47\frac{1}{4} \times 28\frac{3}{4}$ inches. *Source:* Arkansas Arts Center Foundation Purchase: 1994–95, Collectors Group Fund. (1994.044) Courtesy of the Koplin Del Rio Gallery, Los Angeles, CA.

expressive) facts of the image and set the stage for the drawing's near white and near black tones. In this fully tonal drawing, notice that line, as contour, is entirely absent, with edges being established by contrasting values. Again, note the reflected light on the dark side of the woman's head.

Always relate the value of one plane or area to another, not only when they are close together in the drawing but when they are located far apart on the page.

AERIAL PERSPECTIVE

In tonal drawing, subject matter seen at a considerable distance will be somewhat changed by water and dust particles in the air. Aerial perspective refers to the things we see far away in the spatial field, such as hills, buildings, and trees, usually located near the horizon line. Such forms will do more than diminish in scale. They will undergo three additional changes. The most evident change has to do with their clarity. Distant forms lose detail and edges appear less distinct. Next, distant forms will

show less value contrast, often appearing lighter than we know them to be. Thus, a mountain at the horizon may show only a few closely related light-toned values. Lastly, distant forms show little or no texture; a stand of pine trees appearing as a soft-edged light-toned shape.

When drawing tonally, it is useful to "bracket" your subject's tonal range by noting its lightest and darkest passages early in the drawing's progress. Doing this helps you to estimate better the degrees of value to follow, because no subsequent value can be lighter or darker than the tonal extremes already drawn. Always relate the value of one plane or area to another, not only when they are close together in the drawing but also when the are located far apart on the page. Seeing each form or interspace in an isolated way risks overmodelling them by running the gamut from white to black in each one. Yet, a white couch drawn in a far corner of a darkened room would be, in its lightest parts, only a middle-gray tone at most. Making it actually white (which can happen if you are not relating it to its tonal environment) would make it appear to be strongly illuminated, or lit from within. Maintaining the consistency of a subject's tonal environment means that the values you draw are those you actually see *in relation to each other*, as the light reveals them.

As a number of the drawings in this book show, values can model forms in either of two ways. They can model them in the context of their inherent lightness or darkness, as in Figures 5.15 and 5.16, or in the context of seeing every part as having the same local tone, that is, with no regard for the lightness of some parts and the darkness of others, as in Figure 4.13 and Figure 5.17. In the first, fully tonal mode, Thiebaud tells us the woman's hair and the chair seat are dark; the chrome, the floor, and the skin are light. This doesn't exempt the artist from modelling either the dark or the light parts; he notes the inherent values of these parts in addition to his modelling of them. Thiebaud's drawing is another example of how effectively reflected light can help explain volume. Note the reflected lights in the cheek, lower arm, and legs, and that the darkest tones in these places are nearest to the lightest ones on each of these forms.

In the second mode, Ingres doesn't distinguish between the values of the hair, the chair, or the man's garments; it is as if everything was the same in value: white. Such an approach clears the way for more fully concentrating on every part of a subject's volumetric character because no attention need be paid to the local tone of its parts. This approach is often used for preparatory drawings, when artists want to study a subject's gestural stance, general form characteristics, and surface structure, which is what Ingres is concentrating on in this drawing.

As Figure 5.7 demonstrates, beginning a fully tonal drawing starts as a search for the sizes, location, and shapes of tones, and tries to group these observed values into some three (or four) categories. Sometimes, two or more adjacent forms will share the same value. When this is the case many artists will merely hint at or even temporarily·

Figure 5.16 Wayne Thiebaud, *Nude in Chrome Chair*, 1976. Charcoal on paper, $30\frac{1}{8} \times 22\frac{3}{8}$ inches (76.5 × 57.8 cm.). *Source:* San Francisco Museum of Modern Art. Private Collection. © Wayne Thiebaud/Licensed by VAGA, New York, NY.

Figure 5.17 Jean-Auguste-Dominique Ingres (1780–1867), *Study for the Portrait of Louis-François Bertin* (1766-1841). Black chalk and graphite, $13\frac{3}{4} \times 13\frac{9}{16}$ inches (34.9 × 34.5 cm).
Source: The Metropolitan Museum of Art, Bequest of Grace Rainey Rogers, 1943 (43.85.4).

omit the border that separates them, as in Figure 5.18A. This is done to establish the subject's tonal environment *before* using values to model the forms. Doing this makes it far more likely that light-toned forms will remain light and dark ones dark, after their volume has been modelled. As Figure 5.18B shows, once the forms are modelled, the edges separating like-toned areas reappear. The "mapping out" of shapes of tone also allows you to see how a drawing's values are arranged compositionally, that is, how their pattern on the page may contribute to the movements and balance of the drawing's design. As noted earlier, the modelling of forms *does* introduce additional values, as Figure 5.18B demonstrates, but establishing a subject's overall value distribution early in a drawing's development assures maintaining both its tonal order and design.

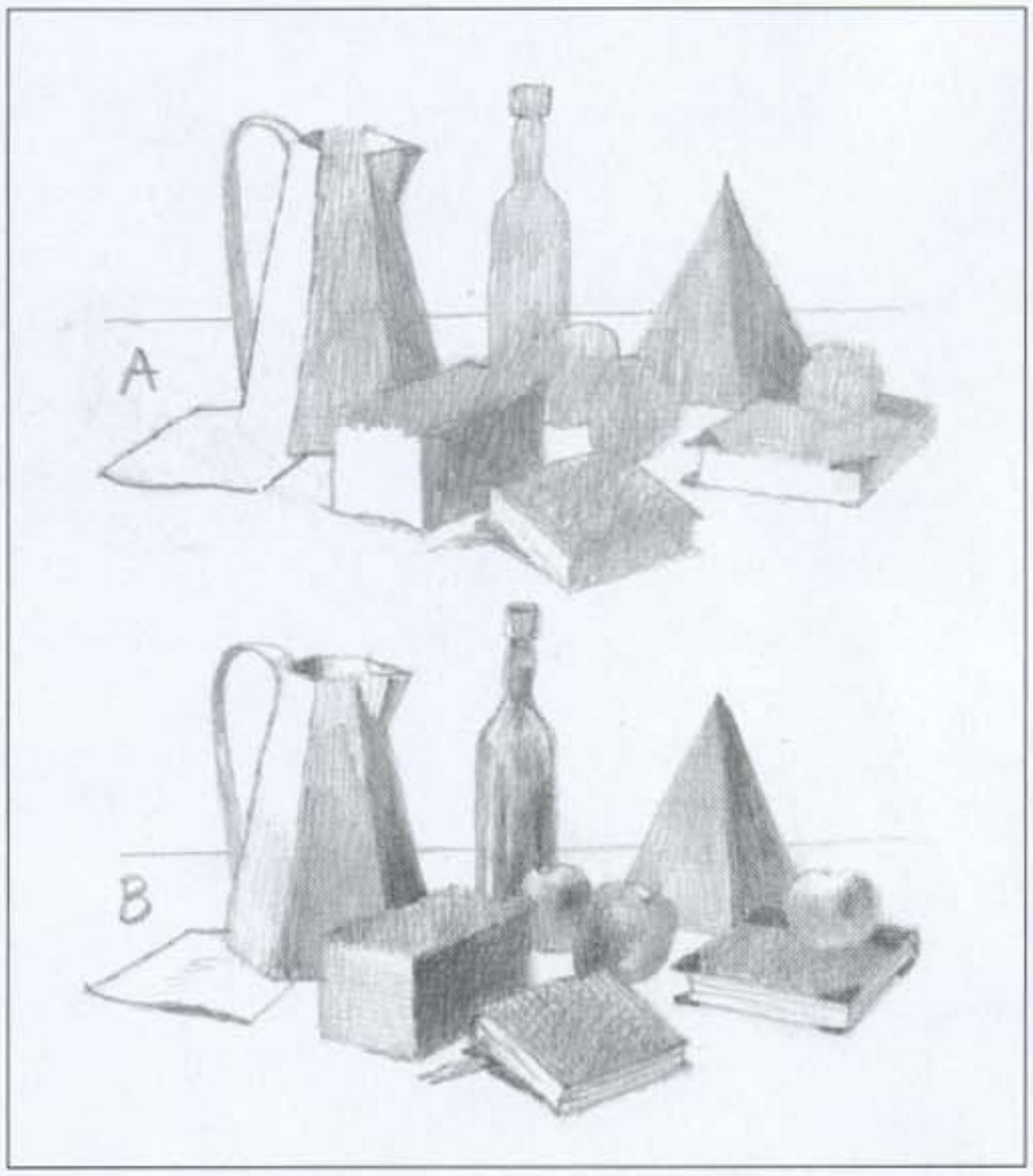


Figure 5.18

Tonal Drawing Exercises

Making a Fully Toned Drawing Select some three or four simple objects, such as fruits, books, cups, and the like, and set them on a plain tabletop against a middle-gray, plain background, and light this still life from a source that is high and to one side.

Using any erasable medium, begin with a light gesture drawing as in Figure 5.19A. Adjust the drawing to show some general characteristics of each object's shape, and the differing lengths and tilts of these objects, as well as their distance from one another. This is a good time to check on the drawing's perspective (Figure 5.19B).

On this gestural "armature," broadly divide into three categories the values of the objects, their shadows, and the one or more tones of the tabletop and background. Remember that the three values include the (usually) white tone of the page, a light gray, and a darker one, as in Figure 5.19C. Where objects show pronounced value

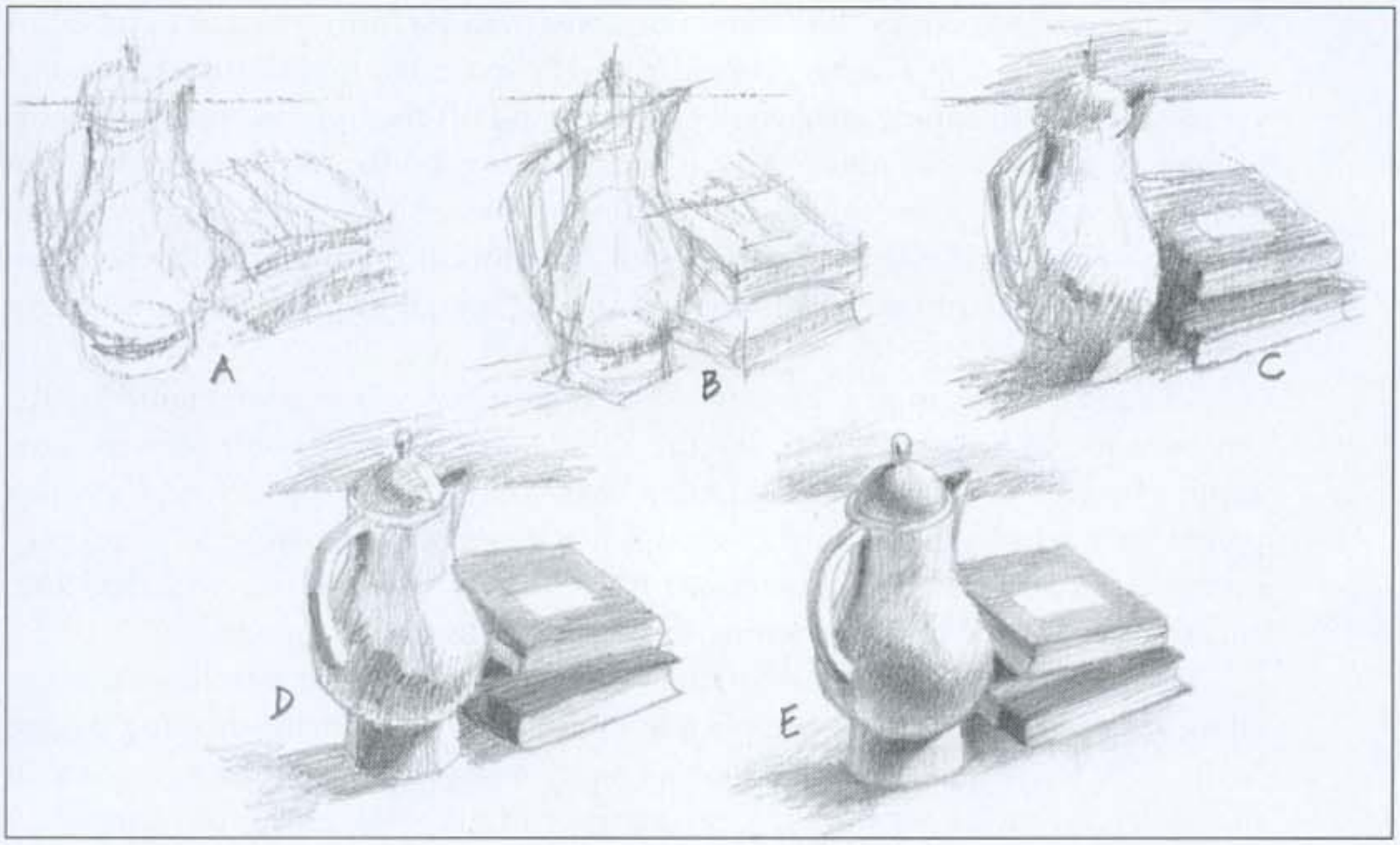


Figure 5.19

differences, as in the books, note these differences at this stage in your drawing. Where the value changes are subtle, as in the vase, use whichever of the three values is closest to the tone of the object, applying it over the entire form. Of course, the lightest tones in your drawing are represented by the tone of the page, so the first values you actually draw are the light gray ones. Notice that Figure 5.19C shows some values running from one part into another with little or no lines marking the boundaries where this occurs.

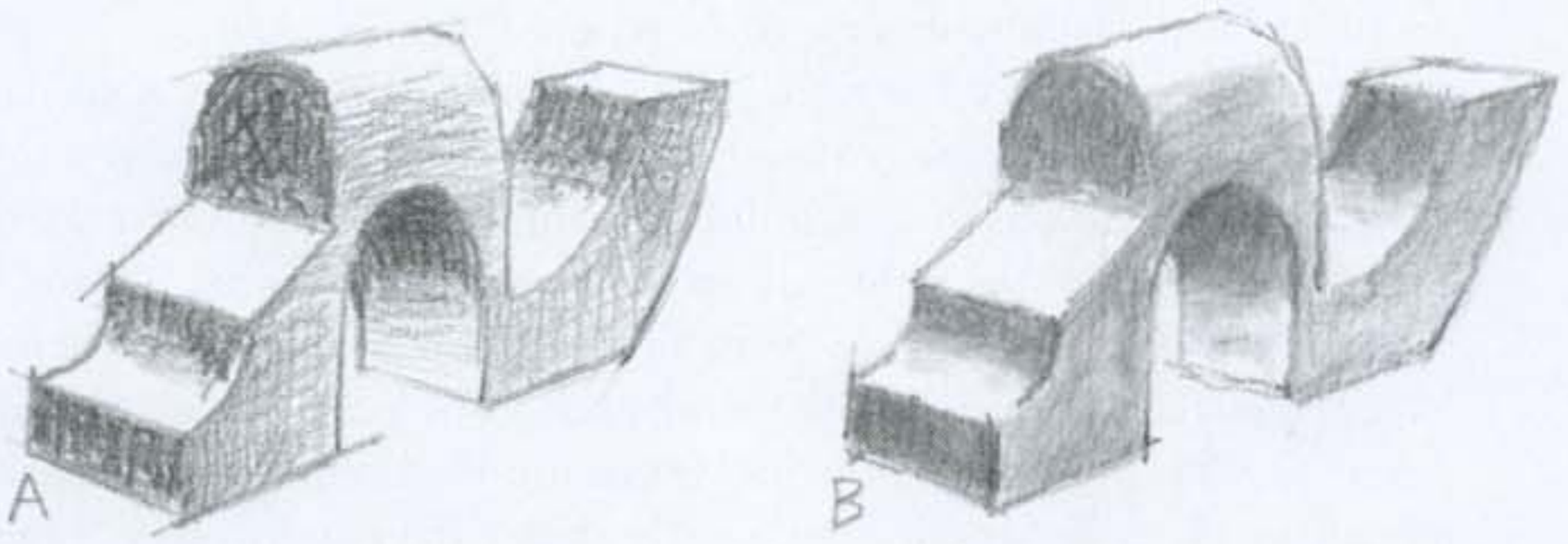
Up to this point the values you've drawn represent the shapes of planes and areas. The next stage brings us to the modelling of the forms. This begins by taking into account how the light strikes the entire set up. If the light falls, say, from the left side, you will, of course, see the right sides of objects to be somewhat darker. Where planes change abruptly, as in a book, the value changes are easy to see. Where value changes are gradual, as in any rounded form, it helps to squint at the object, to see the "margin" where the light can no longer strike the form's surface, as in Figure 5.19D. As with the analytical, "plane finding" lines that precede hatching, this may have the effect of (temporarily) giving each form a more angular and faceted appearance. This more angular treatment of rounded forms is a necessary prelude to modelling them because it more clearly shows the margins where the "filing off" modelling process produces the impression of rounded surfaces, as in Figure 5.19E.

Again, note that sometimes the darkest value on a rounded form is nearest to the lightest value, as we saw in Figures 5.12, 5.13, 5.15, and 5.16. Additional, transitional values will start to appear once you begin to round off the more abrupt abutments of tone. Now, too, is the time to search out subtle tonal differences that, earlier, you combined to produce the simpler, three-value analysis. All the foregoing is designed to more quickly and effectively bring your tonal drawing to the point where you can now further clarify the forms' solidity and the spatial field they occupy, as light can reveal them.

The first laying in of a drawing's light or dark gray values, as in Figure 5.19C, can be made with hatched lines (Figure 5.20A), or by a (more or less) even tone, applied by the side of the drawing lead or charcoal (Figure 5.20B). Note that when preliminary hatchings are used to establish a toned area, it is wise to avoid pronounced textures or strong directions because they may conflict with the lines and/or tones, of the later, modelling stage of your drawing.

Some artists prefer to establish both the underlying values as well as the modelling values by a more rubbed application of tone, as in Korman's drawing (Figure 5.15). This technique requires a drawing paper with at least a moderate "tooth" or surface grain, to file off the pigment particles of graphite, chalk, or charcoal. A rubbed-on tone still shows a little of the white of the paper within it and gives this manner of application a fresh look. When integrated with some hatched lines the result can be both informing and spirited, as in Figure 5.21. But rubbing is not the same thing as smudging, which is a process of repeatedly moving the medium around on the page, driving the pigment particles into the paper with the fingertips or with a paper stump. While a little smudging in a drawing's early stage may simplify or unite a passage, using it as the main manner of application almost always gives an overworked, smoky, and fussy result.

Figure 5.20



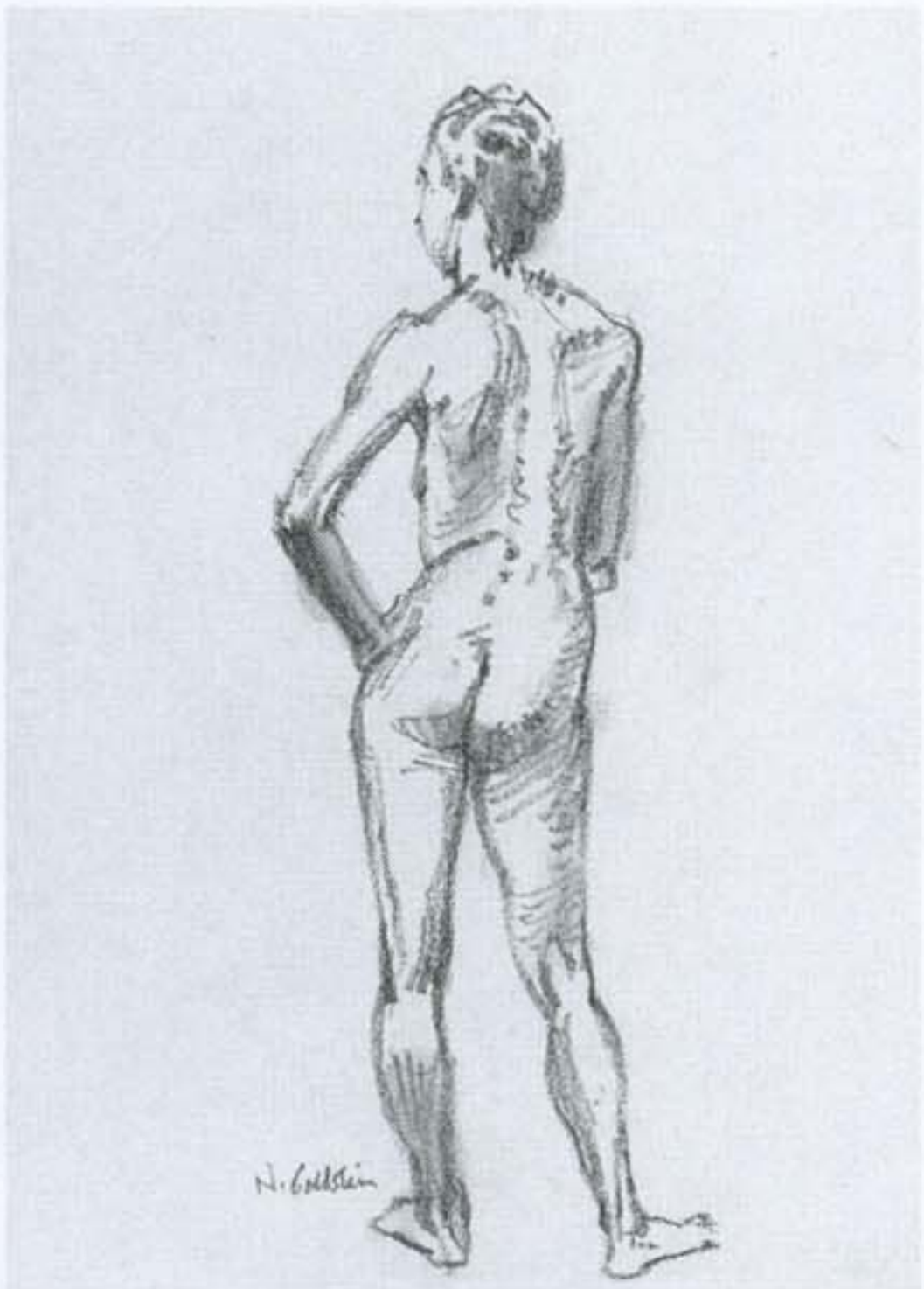


Figure 5.21 Nathan Goldstein, *Standing Female Figure*, Back View. Red chalk, 7 × 10 inches. *Source:* Collection of the artist.

Other artists prefer to establish only the underlying values by rubbing on tone, and use hatching as the modelling technique, as is somewhat the case in Pontormo's drawing, and even more so in Thiebaud's drawing (Figure 5.16). Whichever method is used, to successfully model a form requires that you understand the "hills and valleys" of its surface terrain, as we saw in Chapter Four and earlier in this chapter. Modelling forms that give a strong impression of solidity and illumination calls on your ability to feel you are touching your way around each form's surface without faltering, and seeing that the inherent value of each form conforms to the tonal order of the whole subject.

Making a Tonal Drawing of White Forms If you disregard the inherent value of objects, for example, the dark hair, the light sweater, and so on, you can more directly confront the structural nature of the things you draw. Now nothing is lost in shadows or so brilliantly lit as to intrude on modelling the form. Although drawing subjects as if all their parts were the same in value can still suggest strong light and deep shadows, many artists who choose to model forms in this way feel less bound by matters of illumination and more free to explore matters of surface structure.

Figure 5.22 Peter Paul Rubens (Flemish, 1577–1640), *The Lioness*. $15\frac{9}{16} \times 9\frac{1}{4}$ inches.
Source: © Copyright the British Museum, London.

As noted earlier, sometimes this more analytical way of looking at form is selected for purposes of study. And often such drawings show some passages that rely on line more than value, as in Rubens's *The Lioness* (Figure 5.22), where the animal's head and upraised paw are almost entirely in line, and where line is used to establish many of its contours.

Although some light and dark tones are rubbed on to suggest light falling from the left and somewhat behind the artist, and white highlights add emphasis to the source of light, Rubens does not distinguish between value changes inherent on the animal's parts, or between it and the background. The hatched lines, moving around the forms at various angles, are primarily concerned with experiencing the turnings of the animal's parts and secondarily, with showing the texture of the fur. Note the several cross-contour lines near the root of the tail.

The drawing's emphasis on volumetric solidity suggests that Rubens is trying to experience the surface structure and weight of the animal's forms, as well as its grace and power. This combination of line and tone promotes a more direct and spontaneous handling, where the spirited nature of the calligraphy, the shape

character, and the modelling convey the artist's purposes more clearly than do some fully toned drawings.

This manner of drawing almost always begins with a lightly drawn search for the subject's gesture and general shape character, which can still be seen in a few barely discernible lines in the animal's hind legs. Many artists will then turn to developing the contours, adding values when and where structural clarification requires it as the drawing progresses. In this case, Rubens may have left the head and upraised paw mostly in line because these forms are farthest away, and then concentrated his search for solidity on the nearer forms, giving them an almost sculptural weightiness.

Another example of treating forms as white is Van Dyck's *A Seated Man, Leaning Backwards* (Figure 5.23). Here, too, we can see traces of some preliminary gesture and shape drawing, especially in the figure's right leg and arm. As this preparatory drawing plainly shows, Van Dyck's main focus, like Rubens's, is in experiencing

Figure 5.23 Sir Anthony Van Dyck (Flemish,1599–1641), *A Seated Man, Leaning Backwards.* Black chalk with white chalk highlights. *Source:* Museum Boijmans Van Beuningen, Rotterdam.

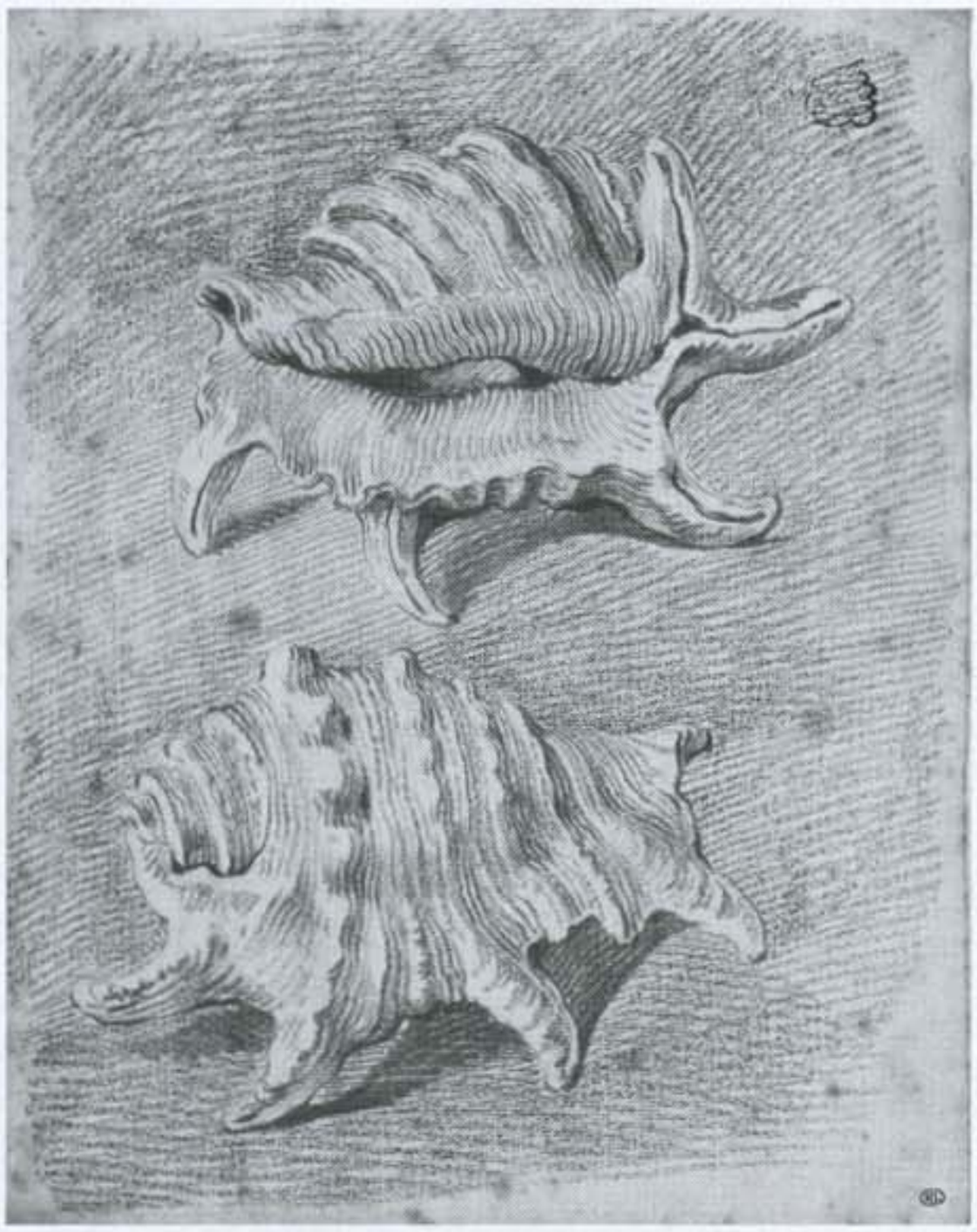


Figure 5.24 Jean Antoine Watteau (French, 1684–1721). *Two Shells*, drawing, 28.2 × 22 cm. Photographer: Michele Bellot. *Sources* Location: Louvre, Paris, France. Art Resources/Reunion des Musees Nationaux.

the subject's structural and spatial character; in this case, the weight, and the solidity of a back view of the figure's torso. The inherently differing tones in various parts of the subject hold little interest for Van Dyck. Here, tones mainly serve structure. While line drawing suffices for the limbs, the torso is seen in variously toned planes, its surface structure advantageously revealed by the light, which falls from above and somewhat to our right. Again, surface turnings are expressed by hatchings laid over some broadly rubbed light and dark tones. Note how, in the lower back, cross-contour lines trace the larger surface undulations.

Sometimes, as in Figure 5.24, the nature of the subject allows cross-contour lines to be the main means for explaining the terrain. Like the undulating lines in Figure 3.14, Watteau's wavelike cross-contour lines are punctuated by darker hatched lines marking more pronounced surface changes. Notice that these hatchings move in the *same* direction on the seashell. Again in Figure 5.25, broken cross-contour lines draw the texture of the hair. While both of these drawings suggest a strong light source, neither one alludes much to differences in the local tone of the parts.

Figure 5.25 Arthur Polonsky (1925–), *Before Leaving*, charcoal, 1973. Sheet: $25\frac{1}{8} \times 19$ inches. Reproduced courtesy of the Boston Public Library, Print Department, by permission of the artist.

Such "white form" drawings are often more linear than tonal. Degas's sketch of mounted jockeys relies mainly on contour lines that flow with the grace and rhythm of the animals' forms themselves, and contains only some broad masses of rubbed and hatched light tones to help suggest the surface character and solidity of these forms (Figure 5.26). Sometimes, too, such drawings show a more balanced interest in the linear and tonal means for expressing form and light (Figure 5.27).

As we have seen, more fully toned drawings usually allow for less calligraphic play of line, while drawings made by some combination of line and value cannot go as far in explaining mass, light, and local tone as do fully toned drawings. It seems we can't have it all, and that drawing requires us to make decisions about the raw material of our subjects. What do we include and what do we omit? Our choices will vary according to what it is we see and want from our subjects in order to satisfy our individual sense of order, invention, and expressive need. And it is by the nature of the choices made that we know the nature of the artist.

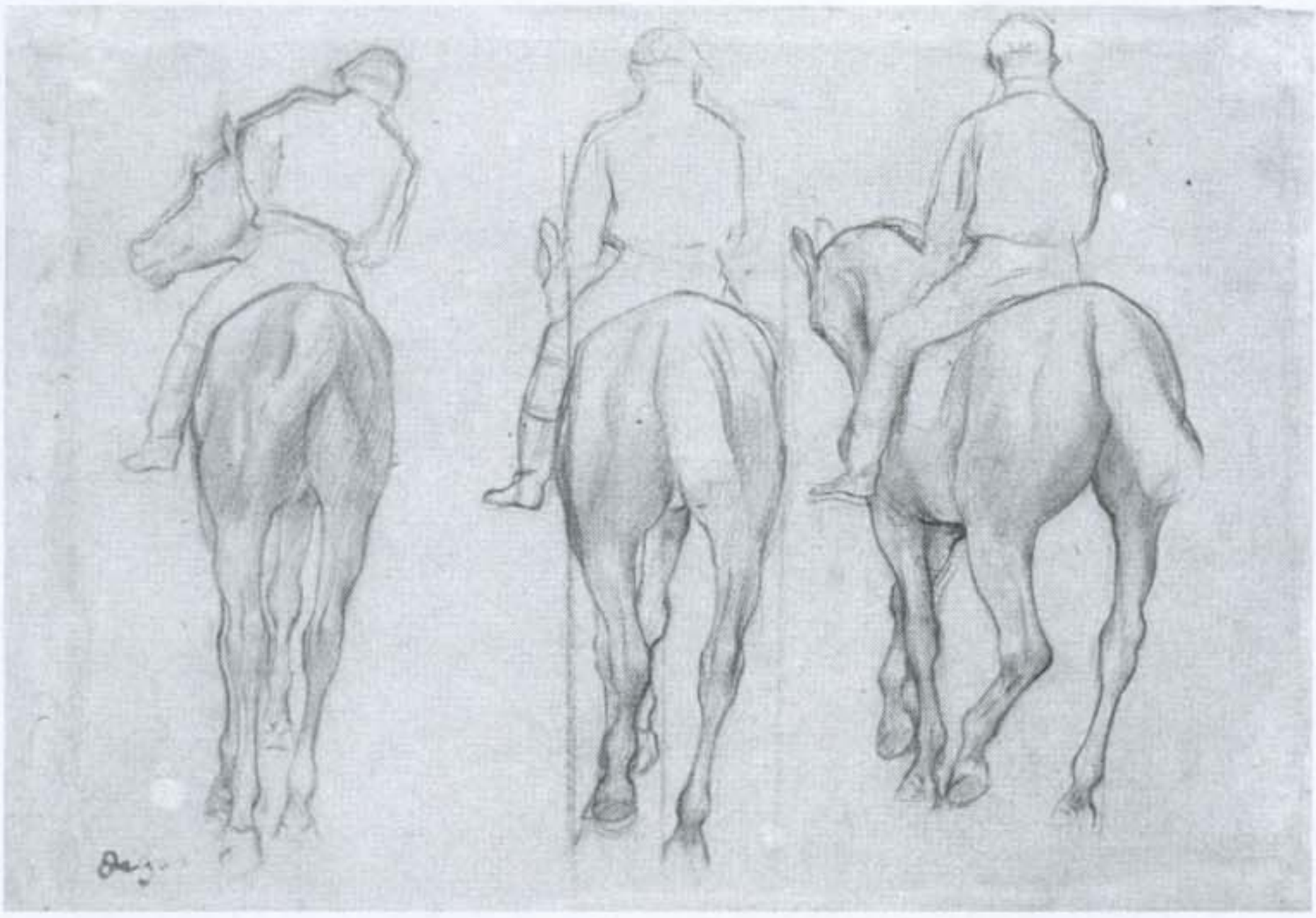


Figure 5.26 Hillaire-Germain-Edgar Degas (Paris, France, 1834–1917). *Three Studies of a Mounted Jockey*, c. 1868–1870, graphite and charcoal on tan wove paper, 19.8 × 27.5 cm. (1943.809) Courtesy of the Fogg art Museum, Harvard University Art Museums. Bequest of Grenville L. Winthrop. Photo credit: Allan Macintyre. © 2004 President and Fellows of Harvard College.

Sometimes the choices may include color. Although color lives on the outskirts of drawing, all the things we see around us are, of course, colored forms in colored settings. What happens when we add color to our list of things to consider when drawing is the subject of the next step in learning to objectively draw what we see.

Things to Think About

1. Light reveals the structure of forms. What else does light reveal about forms?
2. What is the advantage to the artist of seeing a subject illuminated by two sources?
3. Why, when we see a half-moon, is there often no reflected light to be seen on the unlit part of this large sphere?
4. When might skyscrapers and mountains be seen as light-toned and somewhat indistinct forms, and what causes this to happen?
5. What does *tonal order*, or *tonal environment* mean, and how would it apply to white curtains in a darkened room? To a white house seen against the setting sun?

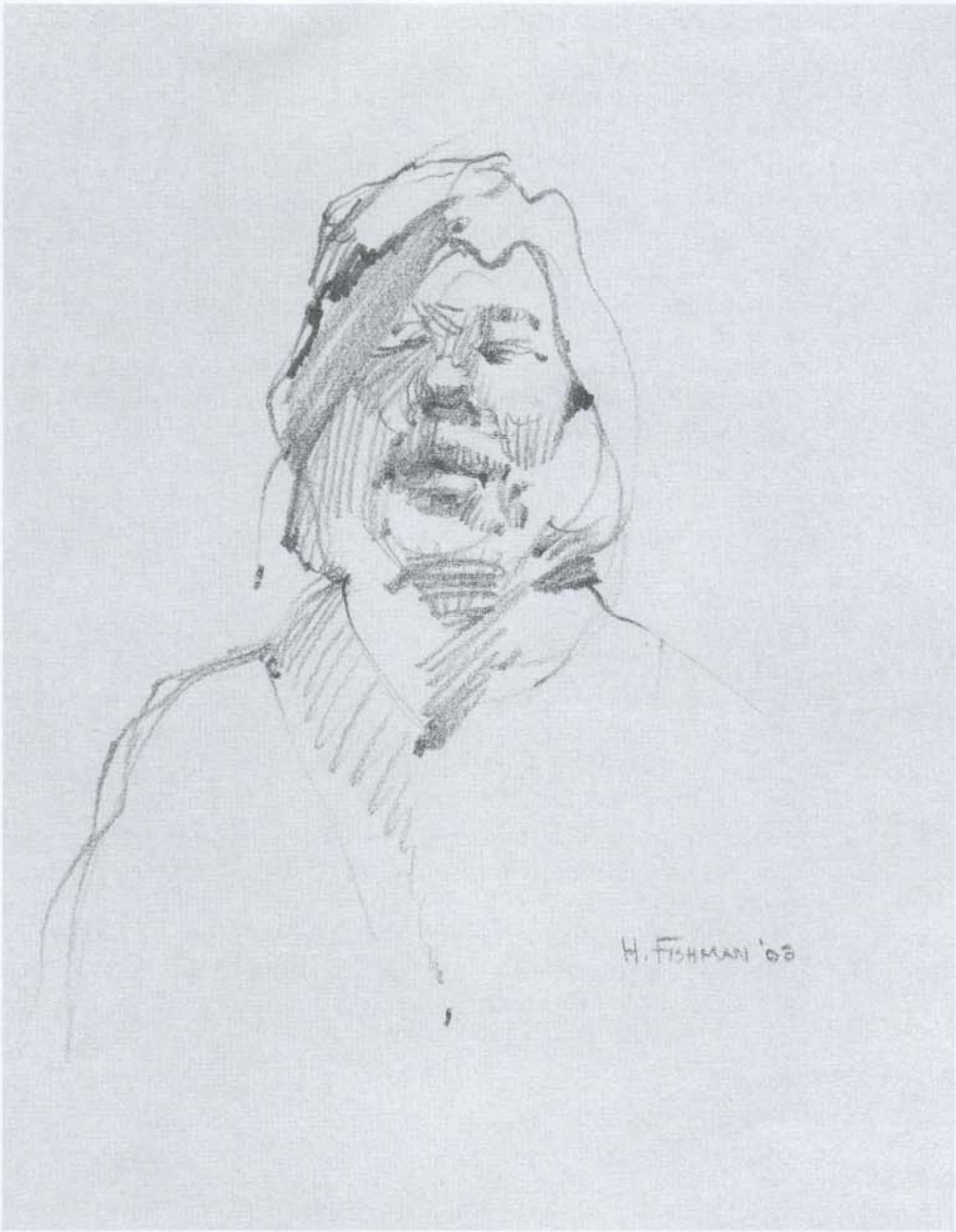


Figure 5.27 Harriet Fishman, *Head of a Woman*. 2003. Black chalk, $8\frac{1}{2} \times 10$ inches. Courtesy of the artist.

Critique Considerations

1. Do your tonal drawings suggest, even subtly, that the forms are illuminated in one of the several ways described in "The Subject Illuminated" section of this chapter? Or does light seem to strike forms in a random manner? If the latter, locate (or decide on) the subject's light source *before* you begin to draw, and, as the drawing progresses, check to see if you have modelled the forms according to the direction of the light's rays.
2. Do the forms in your drawings show the values and shadows of your subject just because they were there? That is, did you merely copy them without considering whether they explained the form or not? This is an easy trap to fall into because you are trying to draw what you actually see. But remember that light falling on a subject is indifferent; it doesn't mean to explain anything. It's up to the artist first to understand each form's surface structure and to experience their turnings and abutments, and second, to select and even alter the accidental effects of light on the forms, in order to more fully express their volume and the space they exist in.
3. Do most of the forms in your drawings seem to show values that run from white to black? This often results from the earnest wish to show each form as three-dimensionally convincing. The problem is that modelling your subject in this way provides no overall, enveloping light, and no way to show the local tone of various parts. It also separates the drawing's component parts, making for a disunited image.
4. Do the forms in your drawings seem more illuminated than structurally and spatially clarified? A fascination with the effects of light can sometimes lead to a lessening of volumetric and spatial clarity among a drawing's parts. Remember that a form's surface structure, whether fully realized or broadly suggested, is a more vital and informing aspect of graphic communication than the light falling on it.

6

Color in Drawing

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COLOR DEFINED

Learning to draw what you actually see includes learning to objectively analyze the colors of the things around you. Once you do, you'll be more sensitive to the ways in which color can expand your options of response to what you see, and to the ways that color can add dimensions and meanings to your work.

Webster's dictionary defines color as a perceived phenomenon ". . . that enables one to differentiate otherwise identical objects." There are three ways in which color enables you to make these differentiations: hue, value, and saturation. A color's *hue* is simply the name it is known by. When we refer to the red hat or the blue house we are naming the observable hue of those things. This is true even when naming the object's hue isn't so easy: "Not the brownish-gray tree trunk, but that greenish-golden, sort of tan, one!" When we refer to a color's value we are, as discussed earlier in this text, stating its lightness or darkness in forms of gray on a scale where white is zero and black is one hundred: "Of these two bunches of red grapes, the bunch on the left is a little darker." And when we refer to a color's *saturation* (or *intensity*) we are declaring its brilliance or lack of it. Some colors are vivid, others are not: That light grayish-yellow blouse is "quiet," but that red-orange one really "screams."

WARM AND COOL COLOR

A fourth characteristic of any color exists partly in the context of other colors, and has to do with a color's *temperature*, that is, its warm or cool nature relative to other colors. There is universal agreement that yellow, orange, and red are inherently warm colors, and that green, blue, and purple are inherently cool ones. But most other colors, especially *tints* (when white is added to a color), *shades* (when black is added to a color), and mixtures of various colors do appear warm or cool according to the temperature of surrounding colors. For example, a lavender flower among blue ones will seem warm, but among yellow and orange flowers, cool. Even among like colors, there are differences of temperature. You can see this at your local paint-supply store by comparing some seven or eight red chips to see which is the warmest one and which, the coolest. Likewise, green, blue, or orange chips, or color chips of any other hue will show a range of temperatures. Under most circumstances warm colors appear to advance and cool ones, to recede. This phenomenon can play an important modelling, atmospheric, and compositional role in drawing what you see.

ANALYZING OBSERVED COLORS

> ***The capital of painting is color, and the capital of drawing is line. The important visual element of value moves freely between these two realms.***

To more accurately match a subject's various colors you need to judge them according to the four color qualities noted above. If, for example, you set out to match the color of a manila envelope, you might begin by asking, "Is the envelope's color warm or cool?" Having noted that it is warm, you should then decide whether it is closest to yellow, orange, or red. Of course, yellow is the obvious choice. Next, determine whether it is a yellow nearer to green or to orange, and add that color. Then, recalling the value scale, select the color's value—twenty degrees? Forty? Adding white, black, or some other color should provide the needed value.

However, adding black to a color is often not the best way to produce a color's shaded version. Try instead to add the color's *complementary* hue. In the case of our envelope, adding a very small amount of purple to your yellowish mixture will both darken and dull the resulting color in a way that may give a better result than will the addition of black. Lastly, decide if the envelope's color is intense, moderately so, or dull, and adjust your mixture to reflect that choice. Each of these inquiries will bring you closer to mixing the needed color.

SOME OF THE ROLES OF COLOR

With rare exceptions, color in drawing plays a supporting, and not a starring role. Although there is no clearly defined border between drawing and painting, it seems reasonable to claim that any work in color that would make almost no visual sense if reproduced in black and white is probably better categorized as a painting. Likewise, it could be claimed that any *monochromatic* work (a work in one color only), and done primarily in line, is likely to be understood as a drawing. Although some exceptions to these two groupings can surely be cited, and despite the impossibility of tracing a fixed boundary between the great realms of drawing and painting, at least their respective "capitals" can be identified. The capital of painting is color, and the capital of drawing is line. The important visual element of value moves freely between these two realms.

> ***When listening to the blues we know the music isn't saying that everything is in the pink.***

But the supporting role of color in drawing can be profound, adding meanings that are not available to drawings in black and white. Its most straightforward role is to identify the hues of objects and areas: "this green apple sports a reddish blush on one side." Color can increase the impression of volumetric and spatial clarity. A black and white tonal drawing of several oranges and plums arranged on a light blue drape can be beautiful, even though the colors are represented by values. But in color, the warm and varied colors of the fruit seen against the receding nature of the cool drape would increase the spatial depth, the nearness of the fruit, and the drape's role in setting them off with color, as well as value contrasts. Something of this can be seen in Demuth's *Plums* (Plate 1). A black and white version (Figure 6.1) shows only the dark tone of the plums, which now appear somewhat less evident among the other dark tones, giving all the drawing's values a more pronounced two-dimensional activity. But in color, the plums produce an advancing purple arc that places the foliage further back, creating a sense of airy spatial depth that is largely lost in black and white, as is the warm-toned sunny atmosphere.

Color is a powerful agent of composition, creating associations, contrasts, and areas of emphasis impossible in black and white drawing. This is easily seen by comparing Figure 6.2 with Plate 2. Here, two identical images take our eyes along different pathways because of the introduction of colors in Plate 2. In Figure 6.2, we are directed mainly by value; in Plate 2, by color. Notice how, in Plate 2, dissimilar shapes associate by similarities of color.

In most paintings, colors play an active role throughout the work, covering all (or at least much) of the surface. In drawing, colors may often be few and sparingly

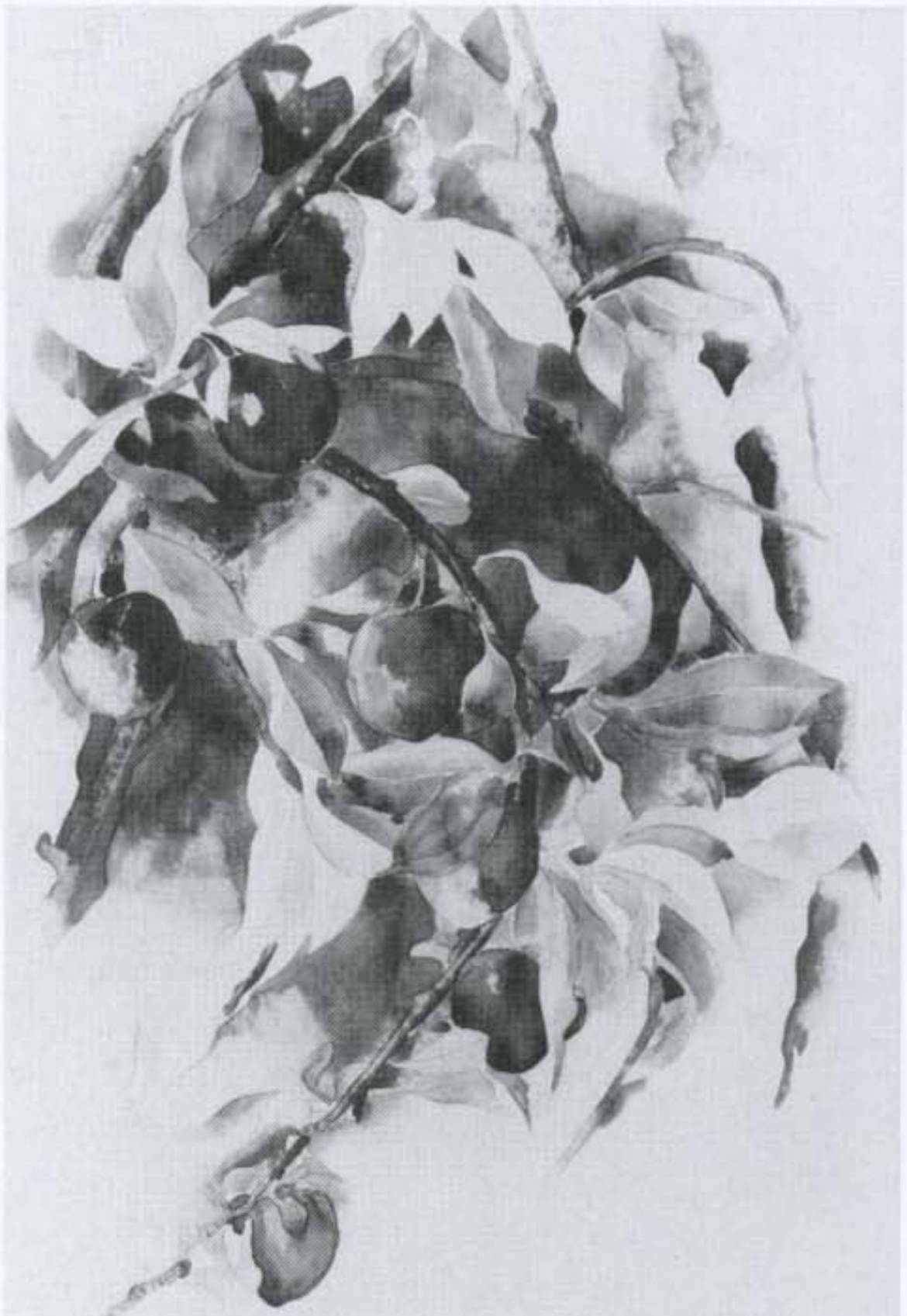

Figure 6.1 (A black and white version of) Charles Demuth (1883–1953), *Plums*, 1925. Watercolor and graphite on wove paper mounted on board, $18\frac{1}{8} \times 12$ inches. 1934.5, museum purchase. *Source:* © Addison Gallery of American Art, Phillips Academy, Andover, Massachusetts. All Rights Reserved.

Figure 6.2

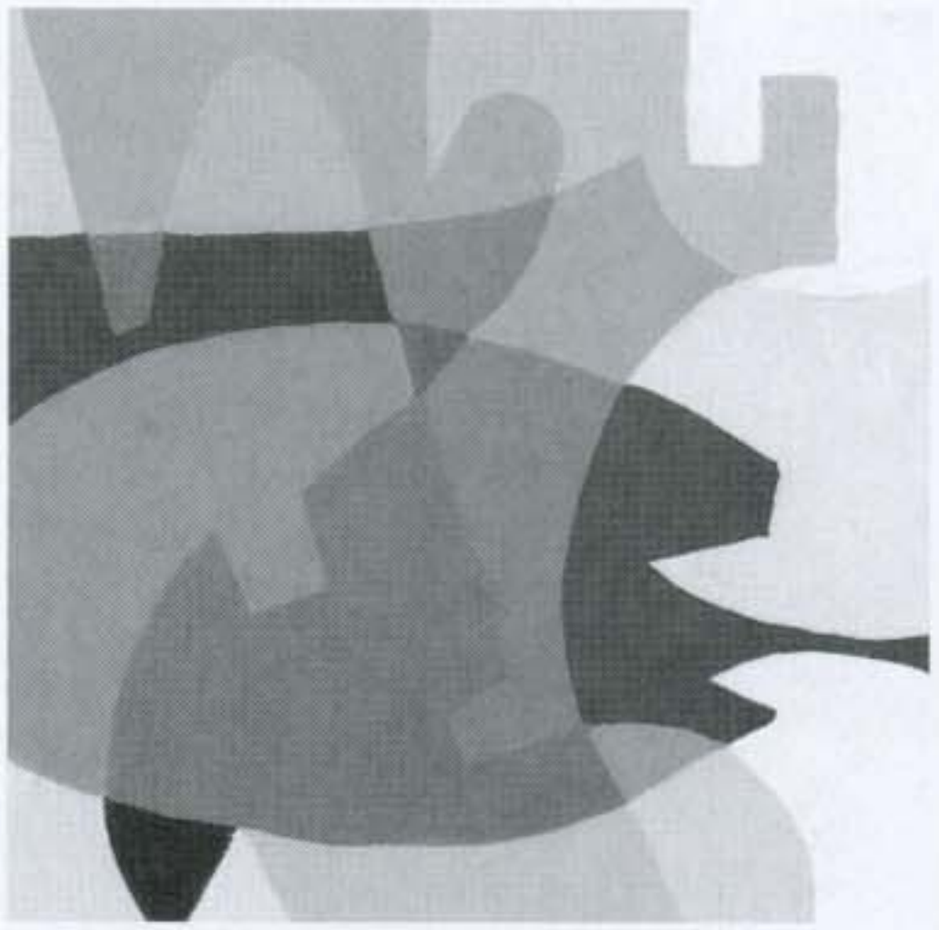

Plate 1 Charles Demuth (1883-1953), *Plums*, 1925. Watercolor and graphite on wove paper, mounted on board, 18 1/8 x 12 inches (1934.5). Museum purchase. © Addison Gallery of American Art, Phillips Academy, Andover, MA. All Rights Reserved.

Plate 2 Color creates associations, contrasts, and areas of emphasis impossible in black and white works. Compare with Figure 6.2.

Plate 3 Jean-Louis Forian (French, 1852-1931), *Figure Studies*. Pen and watercolor, 31 x 19.9 cm. (K-20538). Photograph © National Gallery in Prague, 2004.

Plate 4 Pablo Picasso (1881-1973), *Girl in a Chemise,* 1905. (ART 15451). Photograph ©Tate Gallery, London/Art Resource, NY. © 2005 Estate of Pablo Picasso/Artists Rights Society (ARS), New York.

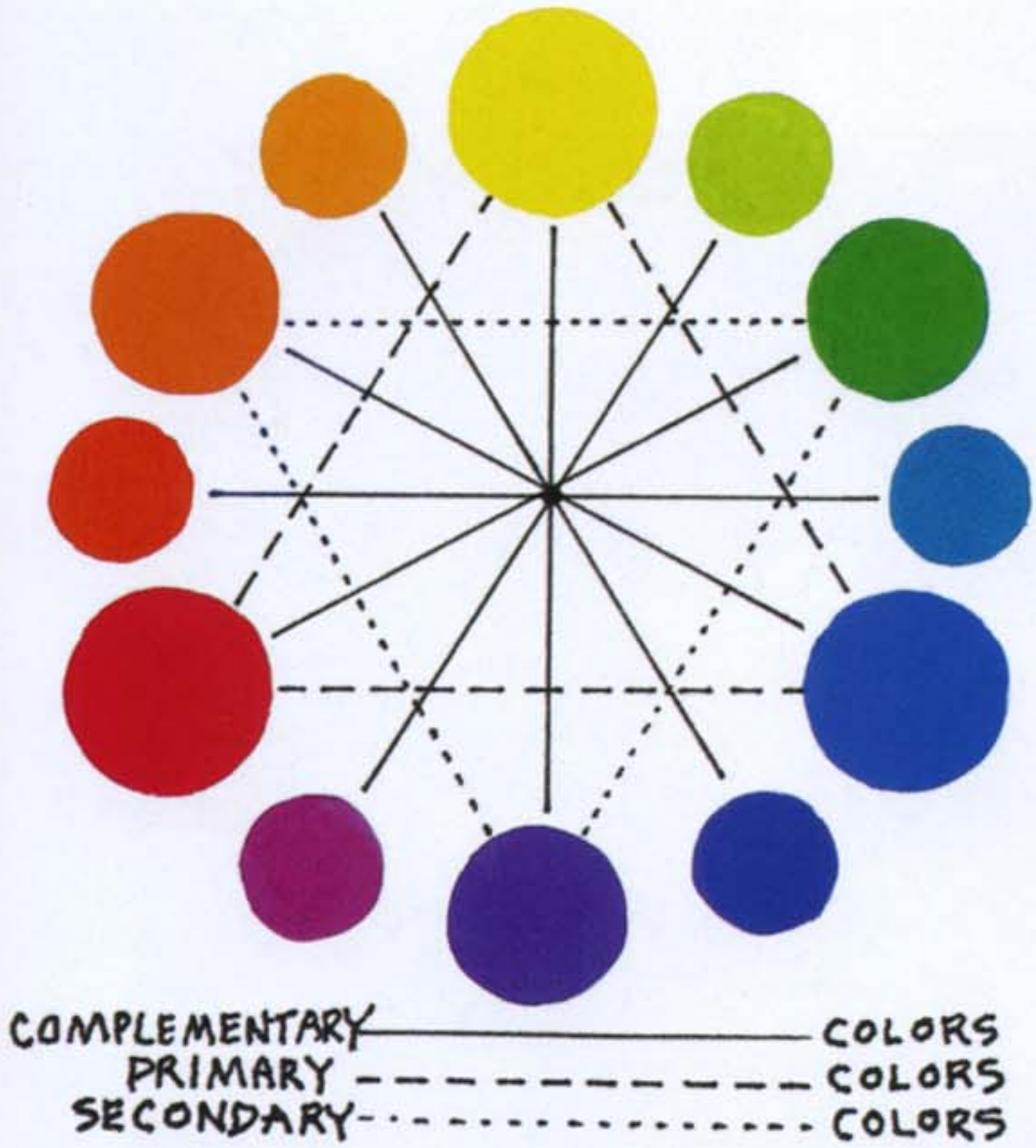

Plate 5 The twelve basic colors of the color wheel.

Plate 6 Martha Alf, *Two Pears # 3* (for Michael Blankfort), 1982. Pastel pencil on paper, 12 x 18 inches (31 x 46 cm). Collection of Elinor and Rubin Turner, Beverly Hills, CA. Courtesy of the artist and Newspace Gallery, Los Angeles, CA.

Plate 7 Jan van Huysum (1682-1749), *Vase of Flowers*, drawing. 47.5 x 35.6 cm. (INV 22669). Paris, France. Photograph © Reunion des Musées Nationaux/Art Resource, NY.

Plate 8 Jean Antoine Watteau (French, 1684-1721), *Two Studies of a Flutist and a Study of the Head of a Boy*, about 1716-1719. Red, black, and white chalk on buff-colored paper, 8 7/16 x 13 13/16 inches (21.4 x 33.5 cm). Courtesy of the J. Paul Getty Museum, Los Angeles, CA.

Plate 9 Giovanni Battista Piazzetta (Italian, 1682-1754), *A Boy Holding a Pear* (Giacomo Piazetta?), about 1740. Black and white chalk on blue-gray paper (two joined sheets), 15 7/16 x 12 3/16 inches (39.2 x 31 cm). Courtesy of the J. Paul Getty Museum, Los Angeles, CA.

Plate 10 Nathan Goldstein, *Seated Figure*. 7 x 10 inches. Sepia ink. Collection of the artist.

Plate 11 Winslow Homer (American, 1836-1910), *The Herring Net (*or *Banks Fisherman)*, 1884. Black, brown, and white chalk, brush and white gouache on green laid paper, 16 5/8 x 20 9/16 inches (42.3 x 52.3 cm). Cooper-Hewitt, National Design Museum, Smithsonian Institution, Washinton, D.C. Gift of Charles W. Gould (1916-15-2). Photograph: Matt Flynn.

Plate 12 Utagawa Hiroshige (Japanese, 1797-1858), *Two Women Playing*. Color and ink on paper, 27.8 x 16.8 x 3.8 cm. Japanese, Edo Period (1615-1868). Freer Gallery of Art, and Arthur M. Sackler Galley/ Smithsonian Institution, Washington, D.C. Gift of Charles Lang Freer (F1904.357) (sec61).

Plate 13 Claes Oldenburg and Coosje van Bruggen, *Apple Core*, 1989. Charcoal and pastel, 12 7/8 x 9 1/8 inches (32.7 x 23.2 cm). Private Collection. © Claes Oldenburg and Coosje van Bruggen.

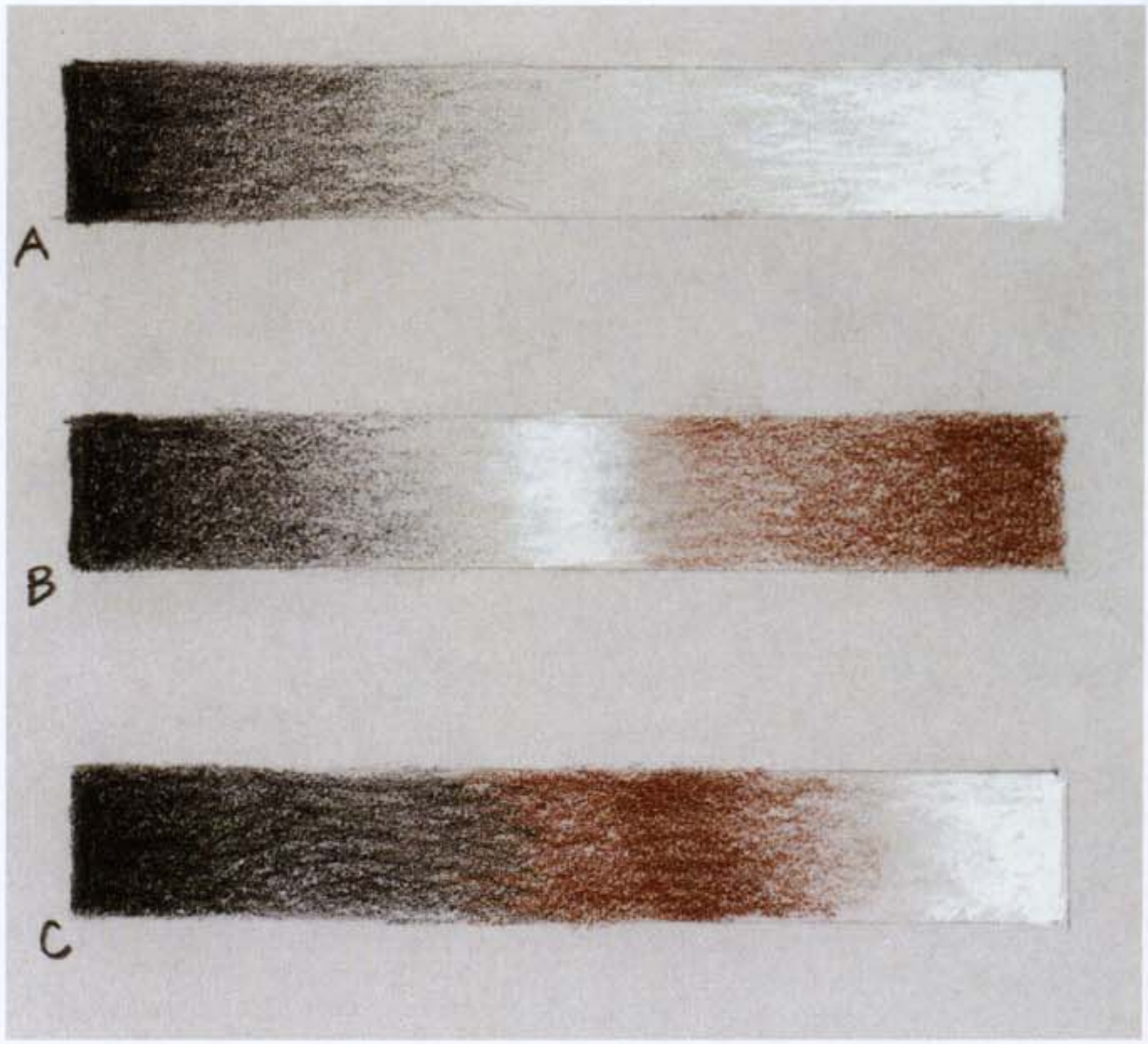

Plate 14 **A:** Value scale incorporating the tone of the background as a value on the way from black to white.
B: The tone of the background used only as a value in the presence of a third color.
C: The third color being used as a color rather than a value.

Plate 15 Note the different visual similarities and differences in the two color versions of the same arrangement of shapes, and that all three versions show approximately matching values of the shapes.

used, occupying only a portion of the drawing's surface, as in Forain's *Figure Studies* (Plate 3), where small washes of flat color enliven the page as they move our eye around on it. Note how both the red and the green shapes of color alternate between functioning as background and figure forms.

Color is also a powerful agent of expression, and its influence on mood is well known. All of Picasso's Blue Period works express the pensive melancholy that blue is capable of invoking (Plate 4). So strong is the connection between color and feeling that we've come to associate colors with moods. When listening to the blues we know the music isn't saying that everything is in the pink. We may be red with rage or gray with exhaustion, but never black with envy or in a green mood.

THE COLOR WHEEL

A useful tool in bringing some order to the great range of observable hues is the twelve-member color wheel (Plate 5). By arranging the colors of the spectrum with yellow at the top, the hues to the left and right of yellow grow darker in value as they descend to violet, at the bottom of the wheel. Additionally, this arrangement shows the hues to one side of yellow growing warmer as they descend, and the hues to the other side of yellow growing cooler.

The color wheel is based on the premise that there are three *primary* colors: red, yellow, and blue, and that among all other colors each of these three hues is least like the other two. That is, these three colors are the most dissimilar ones we can conceive of. Further, none of these three colors can be produced by mixtures of any other colors, whereas, at least in theory, all other colors can be produced by various mixtures among the primaries, plus black and white. As noted earlier, adding white to a color produces a *tint* of that color, and adding black, a *shade*. For example, pink is a tint of red, and brown, a shade of yellow.

The three primaries form a triangle on the color wheel. Roughly equal mixtures between any two primaries form a second triangle. Thus, yellow and red produce orange, yellow and blue produce green, and red and blue produce violet (or purple). These three hues are called *secondary* colors. One characteristic of the secondary colors is that they always hint at their "parentage." Mixtures between any adjacent primary and secondary colors produce the color wheel's *tertiary* colors, of which there are six possible combinations. Their names are always determined by their "ingredients," as in yellow-orange or blue-green. Like the numerals of a clock, these twelve hues complete the color wheel.

Viewing the color wheel gives us a better understanding of how colors gradually change in value and temperature, and helps us to imagine how other crossovers on the color wheel can produce still other colors. Among the possible crossovers are

those directly opposite on the color wheel, for example, orange and blue, yellow and purple, and red and green. Such opposing hues are called *complementary* colors. Roughly equal mixtures between complementary colors will result in variously warm or cool, grayed or *neutral* colors. Notice that such complementary mixtures are always made of one warm and one cool color. Roughly equal mixtures between hues that are near neighbors on the color wheel will produce less grayed results.

Unequal mixtures of complementary colors will produce more or less muted versions of the dominant color. If, for example, a very small amount of green is added to red, the resulting color will be a less intense red. Any hue on the color wheel, when placed alongside its complementary, will bring both colors to their fullest intensity. The term *simultaneous contrast* refers to the brilliant effects of such a meeting of complementary hues.

In objectively drawing what you see it is seldom that all or most of a subject's colors are brilliant members of the color wheel. Except for plumage, fruits and vegetables, flowers, sunsets, the colors of some fabrics, and a few other subjects, most of the colors around us are tints, shades, and mixtures of the twelve hues of the color wheel, plus black and white. For the most part these more muted colors have no names.

It is important to recognize that using color to draw what you see still requires you to regard the values of the things you see. Even changing some of the hues in an observed subject is less of a departure from what is before you than changing their values. For example, if you are making a colored drawing of a landscape, it may be expressively useful to alter the color of the foliage, houses, sky, and the like. As long as you keep fairly close to the values in the subject before you, you can maintain the way light falls on the landscape, explaining the structure and position in space of its various parts, and the landscape's overall atmosphere. But disregarding the subject's values when using color can easily confuse you about light's behavior and may weaken the drawing's clarity of structure, space, and atmosphere. Color does not replace value, it gives values their observed or desired colors. In Alf's *Two Pears No. 3* (Plate 6), the artist has plainly altered the color of the pears and of the cast shadows, but not their values. By doing so she is able to transform the subject in a dramatic way while benefiting from the clarity of form and space that value provides.

Many artists employ color to enhance a drawing's impact by using some of the devices of painting. Often, such colors are laid on in a more or less flat manner, with the tonal modelling of forms and the drawing's lights and shadows expressed by an ink or chalk line, as in Plate 3, and Van Huysum's *Vase of Flowers* (Plate 7).

One manner of using color in drawing dates back over two hundred years and allows the artist to suggest the presence of more color than is actually used. In this mode, the drawing is composed of only a few colors such as black, white, and an earth-red chalk such as terra cotta, and is drawn on a warm- or cool-toned paper. By variously mixed hatchings of these colors on a colored paper, a variety of colors can be suggested, as in Plate 8. Note especially the use of color in the boy's head, and how the artist uses the paper's tone as a value in the modelling of the forms throughout the drawing. In France this technique was called "au trois crayon." But there are many variations on using limited color on a colored surface, sometimes employing more colors or using a strongly toned paper such as a brilliant red or green. Sometimes the color is restricted even further to black and white on a toned surface, as in Piazzetta's *A Boy Holding a Pear* (Plate 9), or even a single color on a white sheet, as in Plate 10 (Goldstein's *Seated Figure*).

Color in drawing is occasionally intense and plentiful. But when this is the case the color impact is almost always matched or overtaken by strong linear or tonal drawing, as Plates 1, 4, 6, and 7 show. Whether color in a particular work is muted or strong, or is sparsely or generously used is of course a matter of its function as well as of expressive necessity. For Watteau, Piazzetta, and Goldstein (Plates 8, 9, and 10), color does set a mood, but is primarily used to establish volume and space with greater clarity and impact. For Demuth, Forain, and Van Huysum (Plates 1, 3, and 7), color's role is more compositional; it helps to balance the work and to move our eyes around the image. And for Picasso, Alf, and Homer (Plates 4, 6, and 11), color is mainly in the service of expression. Even when, as in Homer's strongly gestural drawing, color is represented only by the color of the paper (see also Plate 9), the hue selected can work to amplify a drawing's emotive meaning as the gray-green page in Homer's drawing emphasizes the scene's cold, damp, and isolated atmosphere.

In a very different mood, Hiroshige's *Two Women Playing* (Plate 12), benefits from the dark to light range of brown ink strokes, the flashes of bright red, and the cream colored page. These welcoming warm-toned colors amplify the energetic brushwork, adding to the playful nature of the women. To better appreciate color's expressive ability, try to imagine Homer's drawing in the colors of the Hiroshige work and vice versa.

Sometimes the same colors can serve images of a very different kind. In Oldenburg's amusing *Apple Core* (Plate 13), there is again the warm-toned page, the brown and red colors, and even a similar gestural handling of the marks that we find in Hiroshige's drawing. But then, a comparative playfulness and animation is at work in both drawings, and despite the difference in subject matter (and cultures), the similarities of gesture and movement led both artists to similar color choices.

When drawing on a colored surface with black and white chalk, crayon, or paint, or even when you add a third color such as an earth red, green, or brown, it is almost always best to avoid physically mixing the two or three colors being used. To do so ignores the benefits that the color of the surface can provide in achieving additional color variations. A better solution is to integrate the color of the page with the colors being used, as shown in Plate 14A. Notice how, in Plate 14A, the black hatchings at the left of the bar grow less dense as they move to the right, allowing the *value* of the paper to participate in producing the steady lightening of the bar's tone. Note that toward the middle of the bar it is the background color alone that establishes the needed value. Then, just to the right of that place on the bar, a subtle introduction of white, growing stronger as it moves further to the right, completes the gradual black to white value change in the bar. Of course, black and white hatching or blending alone can give the same tonal result, but then the color of the page is excluded, lending to the sense of its separation from the rest of the work.

When a third color is added, it is still best to avoid its being physically mixed with either the black or white colors because, again, the paper's color is excluded and remains a passive feature in the work. Basically, there are two ways of using black, white, and a third color. The third color can be used as a value, as in 14B, where it "takes over" when black, however lightly used, is simply too dark in value to continue making the gradually lighter tone of the bar. The third color in turn gives way to the tone of the paper, and when the paper's tone is too dark, white is gradually added to complete the range from black to white.

A second way uses the color only as a color. Note how the bar in 14C turns from gray to red. In actual practice, artists often shift from one mode to the other in the same drawing, as Watteau does in Plate 8. In modelling the boy's head, Watteau mainly uses the first mode by using white for the lightest portions, hatchings of white and the paper's color for the half-tone areas, and some black hatched into the darkest places, as on the boy's forehead and far side of the face. But note that he uses red to show the blush on the cheeks and the color of the lips, as well as using it for some of the modelling in the head. In using only red and white when drawing the hands, and black and white in drawing the jacket of the musician on the right, Watteau is again suggesting the color of these parts, as he does in the hair, where all three colors are used. Despite these variations in Watteau's use of the three colors, there is no place in the drawing where the artist has physically rubbed one color into another. Solid areas of color as well as hatchings may be placed adjacent to one another but are not actually blended as they might be in some ways of using pastel.

Figure 7.15 Hyman Bloom (American, 1913–), *Landscape #12.* 1963. Charcoal on cream paper. Image: 114.3 × 149.9 cm (45 × 59 inches). Other (Frame): 195.6 × 147.3 cm. (77 × 58 inches). *Source:* Photograph © 2004 Museum of Fine Arts, Boston. Gift of Emanuel L. Josephs in memory of Esta M. Josephs (1978.310.)

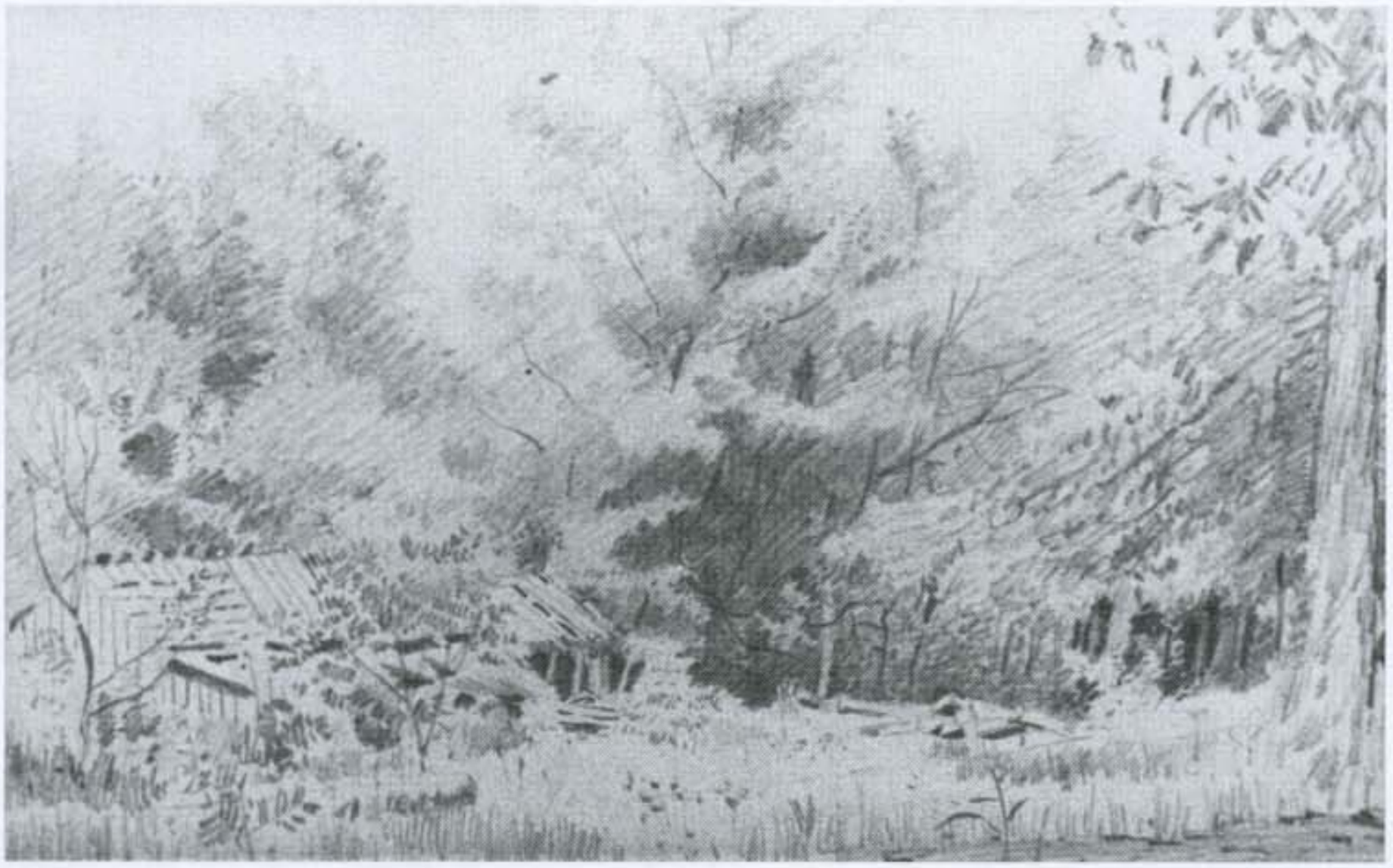

Figure 7.16 Louis Michel Eilshemius, *Old Saw Mill.* Drawing in pencil on white paper, $4\frac{1}{2} \times 6\frac{3}{4}$ inches. *Source:* Mead Art Museum, Amherst College. Gift of Mr. Roy R. Neuberger. (AC1959.156)

Although the rugged texture of charcoal is still evident, the artist is able to suggest the textures of rocks, branches, and leaves. Often, as here, artists will be responsive to both kinds of texture. Figure 7.16 also shows a sensitivity to both kinds of texture: to the fresh and subtle textures that graphite can give, and to the texture of leaf clusters, grasses, and tree bark. Sometimes it seems that experiencing a subject's texture is among the artist's most attracting motives. In Bohlen's drawing of an eider duck, a gentle handling of the soft feathers reflects the bird's fragile and graceful nature (Figure 7.17).

Texture can also exist in certain patterns or groupings. For example, a plaid or paisley shirt, a brick wall or a shingled roof, a leaf-laden tree, or a crowded stadium—all these possess a density of shapes or forms that, in drawing, are often suggested by "shorthand" marks that stand as symbols for the density of things being represented (Figure 7.18). Such texture-filled or "busy" passages of a drawing, contrasting with "emptier" passages, produce various shape or area groupings that have compositional significance.

ability to retain a sharp point over years of use when well cared for (see "Care of Brushes," this chapter) are legendary. Handmade of hair from the tail of the red sable, these rather expensive brushes are more economical and efficient in the long run. Less expensive brushes may not perform as well or last as long.

A serviceable runner-up to the genuine red sable brush is the synthetic "sable" brush, made in the same variety of styles and sizes. They too, have excellent spring and durability. Winsor & Newton's Sceptre brushes and Robert Simmons's white sable brushes are two of the several excellent brands of synthetic brushes available in most art supply stores.

Care of Brushes To keep your brushes in good condition, a few precautions must be observed. As soon as possible after use, wash them thoroughly with any household soap and warm water. Each brush should be washed until the lather shows no trace of color. Bristle brushes can be rotated in the palm of the hand to work the soap up higher in the bristles. The hairs of both bristle and soft-hair brushes should be squeezed to force the lather near the hair base forward toward the tip. After washing, shape the brush and allow it to dry completely before placing it in a closed storage container. If oil paint has been used, the brush should first be cleaned with turpentine or mineral spirits, followed by washing with soap and water. Many artists, as a safety precaution, prefer to wear disposable gloves for these operations.

Never allow paint or ink of any kind to dry on the brush. Doing so destroys the spring and shape of any brush, even if subsequent washing has removed as much paint or ink as possible. Avoid washing any brush in hot water, or allowing them to soak in warm water for an extended time. This will dissolve the glue or resin used to hold the brush hairs in place, causing them to loosen and fall out of the brush *ferrule*, the metal sleeve at the neck of the brush, into which the hairs are deeply set. Never leave brushes resting on their tips in the container that holds the water or, when using oil paint, the turpentine or other suitable solvent. Doing so will soon destroy the brush's shape. Soft-hair brushes are especially vulnerable to this kind of mistreatment.

Using a Brush and Wet Media

Although ink or watercolor is sometimes applied with the bristle brush, it is the soft-hair brush that is most frequently used. Some artists employ both kinds of brush in the same drawing to achieve various textural effects. Ink or paint is applied either full strength or diluted to various degrees with water or with an appropriate thinner. Typically, brush and ink or brush and watercolor drawings show fresh, spontaneous, and resolute characteristics, but extremely exact works are also pos-

sible in these versatile mediums. In fact, naturalist artists and medical illustrators often select brush and ink (or brush and watercolor) as their preferred medium. The point on a round sable brush, even a good-sized one, can produce a line even finer than is possible with the finest dip or fountain pen.

Brush drawing with either ink or watercolor works well on most surfaces, but it is best to avoid very absorbent or very smooth papers at first, as they create unnecessary obstacles for the beginner. A paper with a modest tooth and heavy enough not to buckle and ripple will serve best for most purposes (see "Papers," this chapter). Wet media shrink paper fibers, and thin papers will buckle and wrinkle to an extent that interferes with completing a work or getting it to lie flat.

Some artists will begin a brush drawing by first roughing in a sparse and schematic underdrawing in graphite, but care must be taken to restrict such an underdrawing to light, diagrammatic notations that indicate shape generalities which establish the location and scale of a subject's parts. An underdrawing that goes on to develop contours, details, and even values will seriously restrict the free and assertive use of the brush.

Bigger brushes are usually more beneficial to both conception and handling.

Some student brush drawings show an overcautious handling due to an overworked underdrawing. Or an overcautions drawing may be the result of unfamiliarity with the medium or using a brush that is too small. Bigger brushes are usually more beneficial to both conception and handling. A good guideline to follow is that if your brush feels comfortable for what you are drawing (or painting), it is probably too small. You are likely to find stronger, more economical and satisfying solutions if the brush you are using feels a little large for the task at hand.

PAPERS

A paper's physical composition, weight, absorbency, and surface texture always influence the development and "look" of a particular drawing. The way a medium or a drawing instrument takes to a paper not only determines how an artist proceeds with a work but may even affect the outcome.

The great number of types and weights of paper and their differing surface characteristics may make it difficult to decide what kinds of paper to use for various mediums and purposes. The following may help you to decide which papers to try.

Drawing papers are classified according to surface character and weight.

A paper's surface character is determined by its tooth (smooth, medium, rough) and its absorbency (very little, moderate, high); its weight is determined by the weight of 500 sheets, called a *ream*, and measuring approximately 20 by 28 inches. Newsprint, for example, the paper used in the publication of newspapers, is a 30- to 35-pound smooth-surfaced, highly absorbent paper. Some of the heavier papers, used primarily for watercolor or gouache painting, weigh up to 400 pounds per ream and are about as rigid as cardboard.

Most *permanent* drawing papers, that is, papers that will not deteriorate or turn yellow for a great many years, are made of linen or cotton rag pulp. These rag papers are durable and tough-surfaced, capable of withstanding repeated erasures and other kinds of rough handling. They are also among the most expensive papers. Other drawing papers, made of some combination of wood and rag pulp, treated by some preservatives, and of a more or less neutral pH (an absence of destructive acids) are usually permanent, fairly durable, and less expensive. The least permanent papers are made of wood pulp, untreated by any preservative agents, and are relatively inexpensive. These are the papers most commonly used by students for the many drawings generated by the study of art, from gesture drawings and throwaway experimental sketches to more finished works. The great number of drawings every student produces makes it nearly impossible to buy the more expensive papers. However, as your studies advance, and especially as you turn to works of a more extended and demanding kind, it is important to investigate some of the better papers. The differences in their response to your needs and their plainly superior surfaces and durability are soon apparent, and worth the difference in price.

Watercolor Papers

Heavyweight rag watercolor papers (suitable for all water-based media) are further classified into three types:

1. **Cold-pressed:** Of a moderate tooth and absorbency, this paper accepts all wet (or dry) media well. Its appealing surface makes it the most popular type of watercolor paper in use.
2. **Hot-pressed:** A hard-surfaced, smooth paper, often the paper of choice for some artists using watercolor or pen, brush, and ink. It is the least absorbent of the three types.
3. **Rough:** A moderately absorbent paper with a very pronounced tooth, it is the least suited to precise pen and ink drawing. It gives watercolor and ink washes a brilliance and sparkle less evident with the other surfaces.

These three papers are sold in single sheets, in blocks, and in rolls. In sheets, the most common size is 22 by 30 inches, although sheets as large as 40 by 60 inches are often available. In rolls, 60 inches by 10 yards is the usual size. Watercolor blocks come in sizes as small as 7 by 10 inches to 18 by 24 inches. The papers in blocks are glued on all four edges to flatten any buckling that may occur when water-based media are used. Papers lighter than 140 pounds will buckle even with a restricted use of water. Single sheets of a 200-pound weight or more will not buckle under most circumstances.

Other Papers

Newsprint: Inexpensive and impermanent, it is the mainstay in many art schools for quick drawings and other kinds of studies with all dry media except graphite, which produces faint, gray lines when using the harder leads. Of a light-toned, warm gray color, newsprint comes in both smooth and rough textures. Being lightweight and highly absorbent, it is unsuited to wet media. Newsprint paper begins to yellow within a few months and to deteriorate within a few years. Despite its limited life span, newsprint is ideal for the countless quick sketches, experiments, and preliminary studies you need to make but may not wish to keep.

Charcoal: A 60 to 70 pound paper of moderate absorbency, its pronounced tooth is designed to file away charcoal and pastel particles. Most charcoal papers contain some rag content, and the best grades are 100 percent rag. It is available in a variety of colors as well as white. It takes all dry media well but is too thin for use with fluid media.

Bond: A generic term for a number of white, moderately grained drawing papers. There are too many variations in their manufacture to cite consistent characteristics. As a rule, such general drawing papers take all dry media well but are too thin for wet media. Bond papers range from impermanent types to papers containing a substantial rag content. In weight they may be as light as 50 pounds or as much as 80 pounds.

Bristol and Vellum: Heavyweight papers, they are often made of wood pulp, but the best have an all-rag content. Sold in variously sized pads, these are serviceable papers for virtually all media. Of postcard weight, bristol and vellum papers are usually treated with preservatives and chemically whitened. Of the two, bristol has a smoother surface, ideal for pen and ink drawing. Vellum has a slightly grained

surface that takes the softer dry media better than bristol. Tough and versatile, these papers give you good service for the money.

Tracing: A semitransparent, nonabsorbent, lightweight paper, it has a subtle tooth, much admired by many artists. Finished drawings done on tracing paper must be backed by a sheet of white or colored paper because of its transparency. This paper is also used to develop further a preliminary drawing placed beneath it, enabling the artist to see the preliminary work and make desired changes easily on the tracing paper overlay. This procedure, a commonplace among illustrators, should be used more often than it is by students, who could then more effectively and quickly adjust and develop anatomy, perspective, composition, and other matters in their drawing studies. The better tracing papers are permanent and some are of moderate weight.

There are, of course, many other types of paper suitable for drawing. Many of the printmaking papers used in the making of etchings and lithographs are frequently employed for drawing purposes. As a group, most are permanent and sturdy papers, have a moderate tooth, and are fairly to very absorbent, making them less suited to wet media. Oriental "rice" papers are even more absorbent than Western printmaking papers, but many are designed for use with sumi ink and brush in a technique that takes advantage of the delicate spread of ink washes that such papers afford. Even common kraft paper, the brown paper used for wrapping packages, provides a pleasant tooth and tone for some drawing purposes, and is fairly durable. Recently developed papers made of spun glass, plastic, and recycled paper products all serve various drawing interests and, like the more traditional papers described above, should be investigated.

ADDITIONAL DRAWING MATERIALS

Workable fixative, discussed earlier, is often necessary for the preservation of works done in most dry media, and the tortillon, is a useful tool in some drawing techniques. Here, brief reference to other standard tools and equipment will serve as a checklist for outfitting the art student's drawing kit.

Sketchbooks

Sometimes overlooked, the sketchbook is basic to an artist's research and development. As noted in the Preface, the sketchbook is a kind of private visual journal where experiments, ideas, observations, and both visual and written notations can be more

Sometimes overlooked, the sketchbook is basic to an artist's research and development.

privately collected for further use. It also serves as a portable studio, enabling you to explore and record subjects far from the studio and classroom. Sketchbooks are commonly available in sizes ranging from the tiny 4 by 6-inch book that can be easily carried about in your pocket, to books as large as 11 by 14 inches. Papers vary from those designed for dry media to those intended for watercolor painting. The most convenient (and popular) sketchbook sizes are $8\frac{1}{2}$ by 11 inches and 9 by 12 inches. Typically, sketchbook papers are of a moderate weight (between 40 and 80 pounds) and designed to accept any dry medium as well as pen, brush, and ink, although these papers are usually too lightweight for more than a slight treatment with washes of ink or other wet media.

One convenient type of "sketchbook" enables the user to fill a pair of sturdy, spring-operated covers with any combination of papers cut to the size of the covers. Called *spring binders*, such paper holders are available in several sizes in some stationary stores. In addition to the advantage of a sketchbook you can fill with a variety of papers, the spring binder permits you to add and remove papers at will.

Erasers, often overused to adjust minor surface details at the expense of a drawing's freshness, are more than correcting tools—they are drawing instruments. Erasers can lighten or blend marks and produce various textures. When rubbed into dark-toned passages, they can create light or even white lines. The *kneaded eraser*, of a gray and pliant material, can be shaped to a point for picking out small light areas, or stretched to produce a large surface for removing or lightening large areas of graphite, charcoal, or pastel. Sometimes no rubbing is necessary with this eraser. It can simply be pressed onto an area you wish to make lighter and lifted up. It will carry away some of the pigment particles, producing a lighter tone. Repeating this procedure will lighten tones even further. An additional advantage of this useful tool is its soft composition, which will not damage a paper's surface. When the eraser's surface is soiled, it can be kneaded to produce a clean exterior. Among the most versatile erasers, it is especially well suited for use with vine charcoal, but is too pliant to entirely erase very dark marks in graphite or pastel.

These more "stubborn" marks require an eraser of a more dense and abrasive texture, such as the Pink Pearl eraser, similar to the eraser atop the common household pencil. The familiar Artgum eraser and the more recently developed vinyl erasers are also capable of removing graphite, compressed charcoal, and pastel.

Drawing boards in several sizes are available at art supply stores. Usually made of Masonite, all have clips for holding drawing sheets in place, and the larger boards have a cutout handle for easier carrying. Drawing boards can be easily made by

cutting composition, Masonite, or plywood panels to the desired size, and then attaching the sheet with spring-operated clips.

When using a drawing board, place it as near to vertical as possible to reduce the likelihood of distortions in your drawing. When the drawing surface slopes away at a marked angle from your line of sight, every curve and angle drawn is seen in a slightly distorted way.

Ideally, drawing boards should be placed on an easel. In addition to seeing your drawing on a plane parallel with your subject, you are more likely to use your entire arm (and body) in the act of drawing, instead of the more pinched movements of the fingers that we associate with writing. Then, too, when drawing at an easel you are more likely to be positioned somewhat farther from your drawing, an important advantage in noting discrepancies in the work. Learning not to "crowd" your work is basic to good drawing, and drawing at an easel helps to develop this important discipline.

The purchase of a lightweight easel for drawing at home or out-of-doors need not be expensive. A simple metal or wooden sketching easel will do provided it is stable in construction and design. Tabletop easels are also available, and if space is a problem, many easels are designed to fold away into compact units.

No drawing kit would be complete without a mat knife or penknife for sharpening conte crayon, compressed charcoal, and pastel pencils. These materials often break in even the best pencil sharpeners. These knife-sharpened materials can be brought to a point by turning it on fine-grain sandpaper. Mat knives are also necessary for trimming paper and for cutting mats.

Finally, a pencil sharpener for graphite pencils; a roll of masking tape for attaching papers to boards or to create temporary borders for wash drawings; some brush and pencil containers made from empty coffee cans or plastic jars; a water container for use with fluid media; a small jar of white, opaque, water-based paint, for covering over unwanted lines or blots; a block of disposable palette sheets; and an art bin to store your materials in, will round out those basic items required for the study of drawing.

Glossary

Analytic (analyze, analysis): In drawing, to find in a subject facts pertaining to proportion, direction, shape, structure, organization, and dynamic phenomena.

Axis (axial, axes): The imaginary centerline of a volume; the centerline assumed to run in a volume's longest dimension is called the long axis; the centerline running at a right angle to the long axis is called the short axis.

Binder: The ingredient in a medium that holds the pigment particles in suspension (in wet media) or together (in dry media).

Calligraphy (calligraphic): Pertains to the character of drawn lines; most frequently applied to lines of an animated, often cursive nature.

Configuration: As used here, synonymous with silhouette; refers to a shape's two-dimensional nature.

Complementary colors: Colors located opposite one another on the color wheel; for example, red is the complement of green. Complementary colors always consist of one warm and one cool color.

Content: Pertaining to a drawing's narrative matter; the drawing's representational or story-telling aspects.

Contour: In drawing, the lines or edges that describe a form's shape with implications of mass.

Depiction (depict, depictive): Refers to a drawing's representational content; the act of producing a subject's objective appearance.

Direction (directional): The path the eye follows because of an alignment of elements on the picture plane or in a spatial field of depth, or because of a form's long axis.

Dynamics: In the visual arts, the sense of moving actions among elements and of tensions setting off energies and strivings for change, which figure prominently in a work's compositional and depictive nature.

Emotive: In drawing, to empathetically interpret a subject's dynamic and expressive potential; a drawing's capacity to convey the artist's feelings about the subject.

Experiential: As used here, the sensation of touching a subject's forms; of kinetic identity; to feelingly identify with a subject's character and dynamics.

Facets: (See *Planes.*)

Foreshortening (foreshortened): Defines a form's position in a spatial field where some of its surfaces are shortened in the direction of depth. All volumes show some surfaces shortened in this way, but the term is usually applied to forms or surfaces seen nearly on end.

Glossary

Form: In the fine arts, this term usually refers to a work's overall visual nature, especially regarding the character of its dynamics. As used here, the term is also synonymous with volume, mass, and solid.

Geometric: Pertains to both shapes and volumes whose usually simple form structures are seldom seen in perfect form in nature, as for example, the circle, sphere, square, block, and cylinder. Artist understand geometric forms to underlie all the forms they see, as in the sphere that underlies an apple, or the wedge that underlies a foot.

Gesture (gestural): Refers to the basic arrangement of a subject's parts and to the directed actions sensed among them; a subject's underlying pattern of moving energies and essential form characteristics.

Grain: The surface texture or tooth of paper or other supports used for drawing.

Handling: As used here, pertaining to the nature of the artist's mark-making, from a deliberate and premeditated manner to an impulsive and urgent one.

Hatching (cross-hatching): A technique of modelling form and space in which ranks of parallel lines produce light or dark values depending on the density and width of such lines in a given area. In cross-hatching, such groups of parallel lines are drawn crossing over each other at different angles.

Hierarchy: As used here, the ranking of compositional themes in order of visual importance.

Intensity: In the visual arts, pertaining to a color's brilliance and saturation.

Intersection: As used here, pertains to the point at which two contours or edges meet.

Interspace: As used here, an enclosed area seen as background or as the part of a form adjacent to the part being drawn. For example, when drawing the shape of a doughnut, its hole is an interspace, but when drawing the shape of the hole, the doughnut is the intespace. The term also pertains to areas separating or surrounding forms. Used in this way, synonymous with the term *negative space*.

Light-fast: A color's ability to retain its hue, intensity, and value permanently.

Local tone: The actual value (or values) of a form or space; the inherent lightness or darkness of a form's parts aside from the effects of light upon it. For example, a canary is inherently light-toned, a raven, dark-toned.

Location: The proximity of forms or other elements to each other; the association of like or unlike elements according to their position on the picture plane or in a field of depth.

Mass: (See *Volume*.)

Medium (media): The dry or wet materials used by artists to produce drawings.

Model (modelling): In drawing, the process of creating the impression of volume and space by using value.

Monochromatic: Pertaining to the use of a single color in a drawing; any work executed in one color, but often showing variations of that color from light to dark values.

Negative space: (See *Interspace*.)

Optical: As used here, pertaining to what the eye actually perceives.

Organic: In the visual arts, pertaining to the shape and surface-structure of forms in nature, from an acorn to an elephant.

Physical weight: Refers to the actual weight of known objects.

Picture plane: The flat and bounded surface on which a visual work is executed. Artists consider the fact that a drawing's marks, existing on the surface of the support, are major compositional and expressive considerations, separate from the role of marks in creating the illusion of volume and spatial depth.

Planes (planar): In drawing, the flat or curved facets that define a form's surface-structure. For example, the six sides of a block are planes.

Positive shape: In the visual arts, an enclosed area representing the two-dimensional configuration of a volume.

Relate (relational): The act of seeing visual associations and contrasts among a subject's parts based on scale, value, direction, shape, structure, texture, location, and color.

Rhythm (rhythmic): In the visual arts, the recurrence of directed movements among a work's lines, values, shapes, colors, textures, or volumes.

Solvents: The thinning fluids used in wet media to thin paint or ink, to produce washes, or to clean painting utensils.

Space (spatial): In the visual arts, pertaining to intervals between boundaries and points on the picture plane (two-dimensional), and to areas possessing depth as well as length and breadth (three-dimensional).

Structural analysis: As used here, the investigation and interpretation of a form's surface-structure.

Surface-structure: Pertaining to the planes and turnings of a volume's surface.

Temperature: In the visual arts, pertaining to the warm or cool nature of colors.

Tension (tensional): Pertaining to elements or parts of a single element that appear to be striving to join, repel, or clash with each other, or to alter their location or shape. Elements engaged in a tensional confrontation suggest a charged field of energy between them. Often such elements seem to compete for supremacy.

Thinner: (See *Solvents.*)

Tooth: (See *Grain.*)

Two-dimensional: Pertaining to the visual conditions of the elements on the picture plane.

Three-dimensional: Pertaining to the visual conditions of volumes in a spatial field of depth.

Underdrawing: The initial sparse gestural or diagrammatic drawing notations intended as a guide to a drawing's subsequent development.

Visual weight: Pertaining to an element's or a form's power to attract the viewer's attention by eye appeal.

Volume: As used here, any three-dimensional form, regardless of identity, structure, or size: a green pea and a skyscraper are both volumes. Synonymous with the terms *mass* and *solid.*

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Drawing to See

Nathan Goldstein • Harriet J. Fishman

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